LESSONS FROM THE LABORATORIES OF DEMOCRACY: ENVIRONMENTAL INNOVATION IN THE STATES

HEARING

BEFORE THE

SUBCOMMITTEE ON NATIONAL ECONOMIC GROWTH, NATURAL RESOURCES, AND REGULATORY AFFAIRS

OF THE

COMMITTEE ON GOVERNMENT REFORM

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LESSONS FROM THE LABORATORIES OF DEMOCRACY: ENVIRONMENTAL INNOVATION IN THE STATES

WEDNESDAY, SEPTEMBER 13, 2000

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON NATIONAL ECONOMIC GROWTH,
NATURAL RESOURCES, AND REGULATORY AFFAIRS,
COMMITTEE ON GOVERNMENT REFORM,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:45 p.m., in room 2447, Rayburn House Office Building, Hon. Paul Ryan (vice chairman of the subcommittee) presiding.

Present: Representatives Ryan, Terry, Kucinich, and Sanders.

Staff present: Marlo Lewis, Jr., staff director; Barbara F. Kahlow and Jonathan Tolman, professional staff members; Bill Waller, counsel; Gabriel Neil Rubin, clerk; Elizabeth Mundinger, minority counsel; Ellen Rayner, minority chief clerk; and Jean Gosa, minority assistant clerk.

Mr. RYAN. The hearing will come to order.

This is a hearing of the Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs. I am Paul Ryan from Wisconsin.

I will begin with a brief opening and then I will yield to my colleague from Nebraska, Mr. Terry, and then the ranking member, Mr. Kucinich, who I think is on his way over.

Let me begin by thanking the witnesses, all of you, for coming some great distances to testify today. We are very interested in what you have to say on this very enlightening and important topic.

In the Almanac of American Politics, 2000, Michael Barone wrote, "the initiative in shaping public policy is leeching out of Washington to the States, to the localities, to the private sector."

Although Barone primarily had in mind State, local, and private sector achievements in welfare reform, crime reduction and wealth creation, an impressive, albeit seldom publicized shift in the initiative from Washington to the States is also occurring in environmental policy.

Today's hearing will showcase innovative environmental solutions that may surprise many of us in Washington-solutions tested in the "laboratories of democracy," otherwise known as the States.

Today's panel of witnesses include some of America's leading environmental policy innovators. I am very pleased to welcome Langdon Marsh, the director of Oregon's Department of Environ-

mental Quality; Jim Seif, secretary of Pennsylvania's Department of Environmental Protection; Karen Studders, the commissioner of Minnesota's Pollution Control Agency; and Lisa Polak Edgar, the deputy director of Florida's Department of Environmental Protection.

Each of you has a major environmental success story, or several such stories, to tell. We are eager to learn why your agency instituted those reforms, what results you have achieved and what lessons, if any, your experience offers for other State and Federal policymakers.

I would also like to extend a warm welcome to North Carolina Representative Joe Hackney, who chairs the National Conference of State Legislatures' Environment Committee; and Lynn Scarlet, the executive director of the Reason Foundation Public Policy Institute.

Mr. Hackney, among other things, will discuss what changes in national policy would encourage the kinds of environmental success stories our State agency witnesses will be sharing with us today.

Ms. Scarlett's organization maintains the most comprehensive research program on State environmental innovation of any think tank in the country. Thank you for your intellectual leadership.

Finally, I would like to welcome our minority witnesses, Erik Olson, the senior attorney at the Natural Resources Defense Council, and Christopher Recchia, a member of the Northeast States for Coordinated Air Use Management and deputy commissioner of the Vermont Department of Environmental Conservation.

Over the past 30 years, the United States has taken a largely top-down command-and-control, one-size-fits-all approach to environmental protection.

When the environmental problems facing this country were of the big and obvious variety—"haystack" problems like burning rivers, soot-belching smokestacks, and haphazardly dumped toxic wastes-the technologically prescriptive, centralized-from-Washington approach was feasible and reasonably effective.

However, after three decades, the old approach is beginning to produce diminishing returns and even, in some cases, counterproductive results.

For example, Superfund was an extremely popular program when it was enacted. But today, most observers acknowledge Superfund is mired in litigation, it squanders billions of dollars, and yields little discernible benefit to public health.

Another example, one that I am very familiar with as a Wisconsinite, is the oxygenate requirement for gasoline in the Clean Air Act Amendments of 1990. To meet that mandate, petroleum producers had to put MTBE in the gasoline supply. Regrettably, MTBE is now contaminating groundwater in some areas of the country. We really felt this one in my home State.

The original centralized, command-and-control approach cannot easily solve today's more elusive and dispersed "needle in a haystack" issues, such as species habitat conservation, agricultural runoff, and watershed management.

Yet, national priorities and methods have changed little since the Environmental Protection Agency was founded in 1970 with its major focus on point source pollution and traditional toxins.

While Federal environmental policy has largely remained static over the last several decades, State environmental agencies have been moving to fill the void. States are setting priorities, developing partnerships with the EPA and the private sector and achieving measurable results.

States are experimenting with incentive-based programs that foster technological innovation and encourage companies to go beyond mere compliance.

In addition, States are basing environmental decisions on sound science, risk assessment, and other tools that maximize benefits with limited resources.

Ultimately, States may be the key to successfully solving the environmental issues of the 21st century.

Of course, the topic of today's hearing is not without controversy. Some critics of State environmental performance warn that any shift of authority from Washington to the States will trigger a "race to the bottom."

The critics fear that absent rigorous control by the EPA the States will compete for business investment by lowering environmental standards and relaxing environmental enforcement.

In part, such fears are based upon the opinion that the States allowed or even promoted environmental degradation until President Nixon and Congress created the EPA in 1970 and Federalized environmental policy.

This reading of the historical record is very questionable. Recently, using the EPA data, Indur Goklany, a manager of science and engineering at the U.S. Department of Interior, shows that air quality began to improve substantially in the decade before federalization, especially for pollutants, such as particulate matter and sulfur dioxide, which were generally recognized as public health problems at the time.

Goklany further notes that between 1960 and 1970, the number of State air quality programs increased from 8 to 50. That is pretty startling. Many jurisdictions tightened their air quality standards during that decade. Such actions, some of which were quite innovative, look more like a race to the top than a race to the bottom.

I would like to request that two of Dr. Goklany's papers be included in the record. Without objection.

[The information referred to follows:]

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THE ENVIRONMENTAL TRANSITION TO AIR QUALITY

by Indur M. Goklany

ONE OF THE KEY ARGUMENTS used to justify the federalization of environmental regulation in the United States is the myth that before Washington intervened under the Clean Air Amendments of 1970, states were dragging their feet on improving air quality. According to some critics that foot-dragging proved that states could not be trusted to adopt adequate environmental policies, and forced Congress to impose national regulations. Federalization supporters contend that the states' alleged negligence was the inevitable outcome of a so-called "race to the bottom" in which states invariably sacrificed the environment in the inexorable competition for jobs and economic growth, and reduced net social welfare and economic efficiency.

But an analysis of trends in air quality refutes the contention. Focusing on traditional pollutants, that is, sulfur dioxide (SO_2), nitrogen oxides (NO_x), volatile organic compounds (VOCs), particulate matter (PM), and carbon monoxide (CO), shows remarkable progress in improving air quality prior to federalization, particularly in the worst problem areas. Further, a review of social, economic, and technological factors that determine environmental quality shows that the order in which various indicators for each pollutant was controlled is consistent with the hypothesis of an affluence- and technology-driven "environmental transition."

Under that hypothesis, states are continually engaged in a "race to the top of the quality of life." At early stages of economic and technological development, such progress masquerades as a "race to the bottom" for environmental quality. That is because at those earlier stages society places a much higher priority on acquiring basic public health and other services such as sewage treatment, water supply, and electricity than on environmental quality, which initially worsens. But as the original priorities are met, environmental problems become higher priorities. More resources then are devoted to solving those problems. Environmental degradation is arrested and then reversed. And the race to the top of the quality of life looks more like a "race to the top" of environmental quality. In fact, there sometimes emerged the not-in-my-back-yard (NIMBY) situation, with states trying to avoid pollution whether the federal government is pushing them or not.

LONG-TERM TRENDS IN AIR QUALITY AND EMISSIONS

Before trying to understand the reasons for long-term trends in air quality, it is essential to establish when a substance in the air was first recognized or perceived by the general public and policymakers to be a pollutant that needed to be controlled because of its effects, real or imagined, on the public's health and welfare. That period can be called the "period of perception" [p(P)]. Before the p(P), one should not expect that state or local policymakers would have required, or private entities would have voluntarily undertaken, any measures to specifically control that substance. Thus, pre-p(P) trends tell us little about those policymakers' or entities' desire or ability to control pollution.

For example, at least as early as the beginning of this century, smoke and dust were widely perceived to be air pollutants. Well before federalization, substantial progress was made in cleaning them up. Pittsburgh, a city once synonymous with smoke, is a case in point (see Figure 1). (All figures are at the end of this article.)

But for the other traditional air pollutants, the notion that they could also be detrimental to human health and welfare was accepted much later. For example, sulfur dioxide (SO_2) was seen as a substance in need of control only after serious air pollution events caused deaths in Donora, Pennsylvania, in 1948 and London in 1952. Thus the p(P) for SO_2 can be fixed at about 1950. Any SO_2 reductions before that period would necessarily have been caused by purely economic factors, or chance, because sources of SO_2 also emitted smoke, which was being controlled.

As another example, consider the case of ozone and volatile organic compounds. Although Californians had recognized in the 1950s that ozone, a "secondary" pollutant (and its precursor, VOC), were substantially implicated in their smog problems, most jurisdictions did not see them as threats until the late 1960s or early 1970s. Thus, one should not expect those jurisdictions to have instituted controls before the late 1960s or later.

Table I summarizes various milestones for three sets of indicators for each traditional pollutant based upon detailed analyses of historical trends in regulation, and in aggregate national emissions and air quality. For each pollutant, the table

This article is based on Clearing the Air: The Real Story of the War on Air Pollution, *to be published as a Cato Institute book.*

Table I: Milestones and Transitions for Various Pollutants and Indicators

Substance	Period or Year When Substance Was		Worst Year(s) or Period of Transition (Nationally, Unless Noted Otherwise)			
	Recognized or perceived as a pollutant [t(P)]	First federally regulated [t(F)]	Indoor air quality	Outdoor air quality	Emissions (E)	E/GNP[1]
PM	<1900	1971[2]	<1940	<1957	1950[3]	1940s or earlier
SO_2	Approximately 1950	1971[2]	<1940[6]	Early to mid-1960s	1973	1920s
CO	Approximately late 1950s[4]	1967[5]	<1940	Mid-1960s (?), but not after 1970	1970-71	1940s or earlier
VOC/O_3	CA, 1950s	[7],1971[2]	NE	CA,1966-67	NE	NE
	Elsewhere, 1960s or later	1967[5]	<1940[6]	Elsewhere, mid- to late 1970s	1967	1930s
NO_x	CA, 1950s Elsewhere, 1960s or later	1971[2]	<1940, secondary peak around 1960[6]	1978-79	1978	1930s

1 The peak in this leading indicator shows the latest time by which "cleanup" had begun either through deliberate actions or by happenstance. 2 The Clean Air Amendments of 1970 was signed on the last day of 1970, but most federal regulations went into effect later. 3 For PM-10. 4 CO: long known to be deadly indoors, but its status as an outdoor air pollutant was recognized much later. 5 Model Year 1968 for automobiles. 6 Not generally recognized by the public or policymakers as needing remediation indoors. 7 Because federal vehicle emissions were borrowed from, and went into effect after, California's, federalization did not have any effect until after the 1970 amendments were signed; NE = "not estimated."

indicates p(P); when federal regulations first went into effect [t(F)]; and the year(s) when each indicator peaked or went through its "period of transition," [p(T)]. Finally, Table I indicates when emissions per GNP peaked for each pollutant.

For constructing Table I, "indoor" air quality was derived from 1940 through 1990 using, as a crude proxy, residential combustion emissions per occupied household (Figure 2). The outdoor air quality trends were developed by stringing together, for each pollutant, data from EPA (or predecessor agencies') reports on air quality trends, Council on Environmental Quality's annual reports (e.g., Environmental Quality), and the Statistical Abstracts of the United States. These publications usually provide data for several years at a time. By combining several of these series, it is possible to construct a longer series, going back to 1957 for total suspended particulates (TSP) (Figure 3) and 1962 for SO_2 (Figure 4). But for the other pollutants, the data are of more recent origin. Finally, the national emission estimates used to construct Table I came from EPA's 1994 emissions trends report, which provides data from 1900 to 1994 for SO_2 (Figure 5), VOC (Figure 6) and NO_x, and from 1940 for PM and CO.

Table I shows that for each pollutant, the period of transition depends upon the precise indicator (i.e., whether it is indoor or outdoor air quality, or emissions). It also shows that environmental quality had begun to improve substantially before federalization, particularly for pollutants that were gen-

erally recognized at the time of federalization to be public health problems, and especially in the areas where their levels were the highest.

For instance, the 1960s saw relatively rapid progress in urban air quality for particulate matter and SO_2, the pollutants most closely associated with excess mortality during the killer episodes of the late 1940s, 1950s, and 1960s (Figures 1, 3, and 4). A 1973 EPA analysis of national air quality trends showed that between 1960-63 and 1968-71, the four-year average of the annual concentrations for total suspended particulates (TSP) fell at 66 urban stations, went up at 8, and showed no change at 42. Over the same periods, the average number of urban stations exceeding the future annual primary National Ambient Air Quality Standard (NAAQS) dropped from 81 percent to 63 percent.

Similarly, between 1964 and 1971, annual average SO_2 concentrations declined at 19 urban stations, went up at 1, and showed no change at 12. Between 1968 and 1971, the corresponding figures were 42, 3, and 17, with levels at 33 stations being too low to detect meaningful trends. Similarly, oxidant air quality, which was considered to be a problem foremost for California, particularly in the Los Angeles area, had been improving in that area since the 1965-67 period.

The Clean Air Amendments of 1970 were signed on the last day of that year, and there were time lags between the signing of the law, the formulating of regulations to enforce the law, and final compliance with those regulations. Thus most of the improvements between the mid-1960s and 1971 that were uncovered in the EPA analysis would have occurred absent the 1970 Amendments. Hence, there is no empirical basis for blanket statements that state and local governments were failing to control air pollution before federalization. Moreover, the slopes of the trends for the various indicators do not show more rapid declines in emissions or improvements in air quality once federalization became effective (Figures 1-6), except for motor vehicle emissions. But, in fact, the federal motor vehicle emission control program was, itself, derived from California's program, and enacted, in part, not because states were doing too little, but because auto companies and Congress feared some might do too much by passing separate and inconsistent laws.

WHEN DID "CLEANUP" COMMENCE?

In a society whose economy and population are expanding, emissions per gross national product and emissions per capita can serve, to some extent, as leading environmental indicators. Unless there is a sustained decline in those leading indicators, there will be no eventual downturn in emissions, though air quality may well improve. Accordingly, an examination of whether—and when—these leading indicators peaked, indicates broadly the latest time by which "cleanup" efforts may have commenced.

Of particular importance are changes in national emissions per GNP (E/GNP), which measures the aggregate effect of technological change upon all of that society's activities responsible for that pollutant's emissions. E/GNP may, for instance, decrease if old processes are replaced by new, more efficient technologies as a result either of economic factors or of regulatory requirements. Alternatively, it may increase if the structure of the economy changes to include more energy- or pollution-intensive activities. Emissions per GNP peaked in the 1920s for SO_2 (Figure 5), the 1930s for VOC (Figure 6) and NO_x, and the 1940s (or earlier) for PM and carbon monoxide (Table I). Eventually, those reductions were followed by reductions in total emissions –in 1950 for PM-10, 1967 for VOC, early 1970s for CO, 1973 for sulfur dioxide, and 1978 for NO_x (Table I).

Clearly, for SO_2, VOC and NO_x, clean up—a term that must be used cautiously here because one cannot clean up what one does not realize is dirty—had begun long before a substance was recognized as a pollutant [t(P)], and certainly before federalization.

DECIPHERING THE TRENDS-THE ENVIRONMENTAL TRANSITION

There is a relentless logic to Table I: improvements in the indicators of air quality for pollutants known or perceived to cause the largest public health impact came before those for the "lesser" pollutants, in indoor air quality before outdoor air quality, in outdoor air quality before total emissions (for primary pollutants), and for primary pollutants before secondary pollutants.

It is possible to construct a framework to help explain the logic underlying Table I, and the order in which the various peaks occurred for each pollutant and indicator. This framework, represented graphically in Figure 7, is based upon the hypothesis that society is on a continual quest to improve its quality of life, which is determined by numerous social, economic and environmental factors. The weight given to each determinant is constantly varying depending upon a society's precise circumstances and perceptions. In the early stages of economic and technological development, which go hand in hand, a society attempts to improve its overall quality of life by placing a higher priority upon increasing affluence than on other determinants. Such priorities might mean that a society tolerates some environmental degradation. Greater affluence provides the means for obtaining basic needs and amenities (e.g., food, shelter, water, and electricity) and reducing the most significant risks to public health and safety (e.g., infectious and parasitic diseases, and child and maternal mortality).

As a society becomes wealthier, progress is made on such priorities but environmental degradation increases. Thus, environmental problems move to a higher priority on society's list of unmet needs; that is, environmental quality becomes a more important determinant of the quality of life. Generally, a society will enshrine its priorities into laws and regulations unless a priority is self-executing. Even in such a case laws or regulations might be made for the sake of symbolism, as a statement about priorities. Moreover, the wealthier the society, the more it can afford to research, develop, and install the technologies necessary for a cleaner environment. Consequently, a society goes through an "environmental transition," and environmen-

tal degradation peaks. Following that, additional economic and technological development, instead of worsening environmental quality, actually improves it. Once past the environmental transition, depending upon the precise set of circumstances surrounding the costs of action and inaction, environmental degradation might continue to be reduced, stay more or less constant, or, if degradation has been sufficiently reduced, even rise slightly.

Because American society has become progressively wealthier and technologically more advanced over the last century, an environmental transition manifests itself as a peak in a post-p(P) temporal trend line for environmental degradation. Thus, we see in Figure 7 a simplified representation of each of the Figures 1 through 6 for the post-p(P) period. In some instances, for example, indoor and ambient air quality for TSP (Figures 2 and 3), there are no apparent peaks corresponding to any transitions. But this is because the data needed to construct the trends are available only for post-transition [post-p(T)] periods.

Each transition is reinforced by society's technology-assisted evolution from an agrarian, to an industrial, to a knowledge- and service-based economy. That evolution, in turn, causes emissions per GNP to first increase and then decrease (see Figures 5 and 6). The changes are further amplified because the economic and demographic influences of the polluting sectors of the economy also rise and fall as their relative contribution to national employment and GNP waxes and wanes in consonance with the economy's evolution. In a democratic society, this eventually results in increasingly tougher environmental policies in a postindustrial era. Thus it is hardly surprising that increasingly more stringent regulations on industries and sectors such as mining, timber, and agriculture can be seen today and will continue to be seen in the future as their economic and demographic power diminishes.

Accordingly, the timing of an environmental transition for any pollutant should depend upon the general level of affluence, state of the technology, pollutant effects relative to other societal risks, and affordability of control or mitigation measures. But these factors are not independent: affluence helps create technology and vice versa; knowledge of a pollutant's effects is itself a product of technology; and affordability depends upon affluence and technology. In short, an environmental transition should ultimately be determined by affluence and technology.

Table I is, indeed, consistent with the environmental transition hypothesis. With greater prosperity and the advent of new technologies in the early decades of this century, the worst problems—and the easiest to address—were dealt with first. Families voluntarily cleaned up their personal environment, that is, their households, of the most obvious problems—smoke and, to some extent, CO—before anything else. They started switching from wood and coal to gas, oil, and, sometimes, electricity for cooking and home heating. The change also benefited their immediate neighborhoods.

In addition, industrial and commercial establishments invested in new technologies and practices to improve the combustion efficiencies of their boilers and other fuel-burning equipment to reduce smoke partly because smoke signaled poor efficiency, that is, needlessly higher fuel bills, and partly because it testified to their civic conscience. Moreover, since SO_2 and VOC are associated with solid fuel combustion, it also reduced SO_2 and VOC indoors (Figure 2) and helped set in motion the long-term declines in their E/GNP (Table I, Figures 5 and 6), although neither was generally perceived to be particularly harmful at that time.

Next, attention turned to outdoor air. Once again, the first target was smoke because it was the most obvious and an acknowledged pollutant. New technologies and prosperity helped move the industrial and commercial fuel mix from coal and wood toward oil and gas, generally increasing fuel efficiencies across all economic sectors. As a result, soon after World War II, if not earlier, most urban areas had gone through their environmental transitions for smoke and PM (Table I).

With greater prosperity, better health, and reduced mortality, the risks of other outdoor air pollutants became easier to infer or detect. In the years following World War II, deadly air pollution episodes occurred on both sides of the Atlantic, which were ascribed to PM, SO_2, or both. Thus, transitions for PM and SO_2 air quality came next, followed in time by CO and O_3. That the transition for NO_x came last is fitting for a pollutant that was never ranked very high in adverse effects at measured ambient levels, and was also the most expensive to control. This is in large part because many technologies for improving fuel efficiency and reducing smoke, unburnt carbon in ash (both constituents of particulate matter), and CO inadvertently increased NO_x emissions.

A RACE TO THE BOTTOM, OR TO THE TOP?

The notion that states participate in a race to the bottom, relaxing air pollution requirements and reducing net state welfare, is critical to any rationale for federalizing environmental control. A corollary to the race to the bottom hypothesis is that before federalization, there should have been no improvements in air quality anywhere (except by accident or happy economic circumstance). But, in fact, a number of trends show that there was not a race to the bottom.

First, there were broad improvements in air quality for several pollutants before federalization, and the race, if any, seems to have been in the opposite direction. The pre-federalization improvements in air quality are particularly pronounced for those pollutants associated with—and in the areas where they were most likely to create—the largest public health risks. For instance, ambient air quality for TSP and SO_2, the pollutants associated with the killer pollution episodes, had gone through their environmental transitions nationally before the federal government began regulating those pollutants (Table I; Figures 3 and 4). Those improvements were especially noticeable in urban areas (see, e.g., Figure 1). Similarly, CO had either gone through, or was on the verge of its own, transition before federalization (Table I).

In addition, oxidants/O_3 had gone through a transition in California, a state where they were widely recognized to be a problem, before federalization had any real impact in that state. Outside California, few jurisdictions made much effort to reduce oxidants because most were unaware that those pollutants also posed a problem for them until just before—or, in many cases, after—federalization. Perhaps the best evidence for this is the inability to construct a national composite for ozone or oxidant air quality before the early 1970s, because of insufficient monitor coverage outside California. Thus, the relatively tardy response to ozone/oxidants outside California was due not to a race to the bottom, but because states were not racing to solve problems they did not know they had.

Second, in a trend that is inconsistent with any race to relax standards, county and state air programs grew significantly during the 1960s. Between 1960 and 1970, the number of county programs increased from 17 to 81, and state programs from 8 to 50. Even if those programs were window dressing—and Figures 3 and 4 suggest they were not—their existence would, at the very least, send a signal to industries considering moving into particular states that contradicts what would be expected in a race to the bottom scenario. An alternative explanation for the trends depicted in Figures 3 and 4 is that air quality improved despite what many legal scholars contend were poorly written and badly enforced laws that made federalization necessary. In either case, Figures 3 and 4 demolish the myth that federalization was necessary to have progress in the air.

A third trend that contradicts the race to the bottom scenario was that standards for density of smoke emissions and process weight emissions were progressively tightened in many jurisdictions nationwide before the 1970 Clean Air Act. That is to say, those jurisdictions were in effect bidding standards up rather than down—the very antithesis of either a race to the bottom or a race to relax standards. Those tightenings were accompanied by substantial improvements in efficiencies of dust-collection (Figure 8). For instance, overall dust-collection efficiencies for power plants nationwide were estimated to have increased from 40 percent before 1940, to 75 percent in 1940 and 95.5 percent by 1966. In other words, emissions for a ton of coal burnt in the average power plant in 1965 were only 7.5 percent of what they were pre-1940. In fact, a 1970 National Air Pollution Control Administration report suggested that the limited acceptance of the American Society of Mechanical Engineers' 1966 model air pollution control regulations for fuel burning equipment may partly have been because its "control requirements...are generally lenient compared to other modern regulations" and that "many new industrial plants install equipment for purposes of eliminating all visible plumes, even if not required to do so" because they constituted good public relations and reduced complaints.

Fourth, the federal preemption of motor vehicle emission standards outside California indicates the automobile industry and Congress were concerned not about a race to the bottom or a race to relax standards but a movement toward greater control. Federal preemption was designed, among other things, to forestall such a situation.

During the industrial era when jobs and prosperity often signified air pollution, the quest for a better quality of life may have seemed like a race to the bottom of environmental quality. But in today's postindustrial era, prosperity is often inversely correlated with pollution. Now the service sectors account for three of every four nonfarm jobs. Accordingly, many jurisdictions maximize jobs by catering to the needs of the service sectors and their employees while actively discouraging polluting industries altogether. For instance, Florida and many California communities have effectively banned oil drilling off their coasts to protect tourism and commercial fishing. In essence, those communities are maximizing their quality of life by adopting a "not-in-my-backyard" (NIMBY) stance.

FROM A "RACE TO THE BOTTOM" TO NIMBY

The apparent existence of both the race-to-the-bottom and the NIMBY phenomena can be explained by an affluence- and technology-driven environmental transition caused by a "race to the top of the quality of life" (Figure 7). During the early phases of economic and technological development (or if the net costs of controlling that pollutant are perceived to be excessive), the "race to the top of the quality of life" may superficially resemble a "race to relax" or a race to the bottom of environmental standards.

But once a society gets past the transition and environmental factors improve, the race to the top of the quality of life might drive the environmental degradation trajectory in one of several different directions. If the benefits of control for the society are substantially less than its costs, or if the costs are shifted to others while benefits are retained, environmental degradation will be driven down further. That is to say, society will move toward greater cleanup, as indicated by the solid post-transition line in Figure 7. In effect, the race to the top of quality of life would look like a race to the top for environmental quality, and masquerade as a NIMBY situation. Thus, the early apparent race to the bottom and the NIMBY effect are, in fact, two aspects of the same phenomenon. But the former occurs before, whereas the latter occurs after, an affluence- and technology-driven environmental transition, and only if perceived benefits far exceed perceived costs.

However, if the perceived social and economic costs of environmental improvement are in the same ballpark as the perceived benefits that might occur if costs cannot be shifted to someone else, then the precise trajectory—whether it continues downwards but not as steeply as in the NIMBY case, goes up, or stays more or less constant—will depend upon a more careful balancing of the costs (C) and benefits (B). The dashed line in Figure 7 depicts a case where, because the environment has improved sufficiently, perceived benefits no longer exceed perceived costs and, therefore, environmental degradation swings upward, ending in the "C/B Region." Such an upswing in environmental degradation could occur in a number of different situations. New information or changes in societal values and attitudes might cause a society to conclude that past control efforts, for whatever reason, went too far or were unnecessary. Perhaps

limits of clean technology have been reached for the affected activity, there are no substitutes for the activity, and additional activity would necessarily end up having a greater impact. Or perhaps, for whatever reason, society perceives that scarce financial and human resources should be allocated to other problems, as the particular environmental problem seems to have been contained.

The timing of a transition depends upon the specific pollutant or indicator and the relative social, economic, and environmental costs and benefits of addressing that pollutant or indicator. Accordingly, it is possible for a society, group, or individual to be simultaneously to the left of the environmental transition for one pollutant but to the right for another. Hence, it is quite rational and not unusual to oppose, say, transportation control plans on one hand and to support stricter controls on incineration on the other.

SYNTHESIS AND DISCUSSION

As indicated by trends in emissions per GNP—leading environmental indicators in a growing economy that also double as measures of technological change—cleanup commenced in the 1920s for SO_2, by the 1930s for VOC and NO_x, and, at least, by the 1940s for PM and CO (Table I). The first improvements came from voluntary, market-driven measures driven by the desire for—and the ability to purchase—personal and household cleanliness and comfort among the rich and middle class, and by economic self-interest. Households, industry, and commerce started switching to cleaner fuels and more efficient equipment and practices for combustion and other processes. Those actions improved indoor air quality and, eventually, outdoor smoke went through its transition in urban areas shortly after World War II, if not earlier. But as the worst risks to health and safety were reduced, the risks of PM and SO_2 became more evident and more easily inferred. Both substances were implicated in a series of deadly post-World War II air pollution episodes on both sides of the Atlantic. Local and state governments became more active in controlling those pollutants. Thus, transitions for PM and SO_2 air quality came next.

Empirical data showing that the nation had, in the aggregate, gone through its environmental transitions for smoke, TSP, SO_2 air quality, and stationary source CO emissions before federalization directly contradicts any race-to-the-bottom rationale for federalization, as does the timing of the transition in oxidant air quality in California (Table I). In fact, that rationale is intrinsically flawed: if there is any race, it is not to the bottom of environmental quality, but to the top of the quality of life.

Without federalization, there is every reason to believe that air quality would have continued to improve, but perhaps not as rapidly in some areas. But as experience with, and the savings generated by, emissions trading schemes have shown, the command-and-control regulations that drove the additional improvements have exacted a higher price than necessary, and the total current risk to public health would have been lower if there had been a conscious effort to maximize risk reduction for the total costs incurred by society.

Considering that the nation and the states are today substantially to the right of the peaks of their environmental transitions for traditional air pollutants, it is unlikely that devolution would lead to a rollback of the gains in air quality. On the other hand, given the past improvements in air quality and given that the easy—as well as many tough—reductions have already been made, further air quality improvements may not be sustainable if they come at the expense of the broader quality of life.

To ensure that the two go hand in hand, emissions trading should be expanded to allow trades between old and new sources. The pollutant-by-pollutant approach should be replaced by one that focuses on reducing overall risks to public health and welfare at local and regional levels. Control of interstate pollution should be negotiated between affected states, with the downwind states being free to accept, in lieu of additional control of specific air pollutants, other reductions in risk to public health and welfare funded by the upwind (polluting) states if the former deem that would provide greater benefits to their populations. Such risk reduction should not be limited to efforts to reduce risks just from air pollution or, for that matter, other forms of pollution. They could include, for instance, such measures to improve health services and delivery as sponsorship and funding of wider screening for cancer, heart disease, or blood pressure, or vaccinations or other routine-but-underutilized health care procedures.

For intrastate pollution, the federal government should step back from its role as the micromanager of air pollution control and, instead, enter into a more equal partnership with the states. Under such an approach, the federal government would set idealized goals, and states would determine their own attainment schedules and control measures for pollutants produced within, and affecting, their own jurisdictions. That is only appropriate, because the tradeoffs that have to be made to improve their overall quality of life, of which environmental quality is only one facet, necessarily depend upon many location-specific factors, and states will be the major winners or losers from their own actions (or inaction). Because many of the determinants of the quality of life are unquantifiable, optimizing the quality of life should be left to each state's political process. To echo Winston Churchill, it is, like a democracy, the worst method, unless one considers all the others.

CONCLUSION

Prosperity and technology were once responsible for air pollution. Today they are essential for its cleanup. Their transition—from problems to solutions—began toward the latter part of the last century with the emergence of new, clean energy sources and more efficient combustion technologies, and gathered steam through this century. And through the decades, one by one, the various pollutants were brought under control, each being forced through an environmental transition. As if in accordance with a grand design, the most obvious and the easiest-to-control problems were addressed before others, with each pollutant's transition being determined by factors dependent ultimately on prosperity and technology. And contrary to

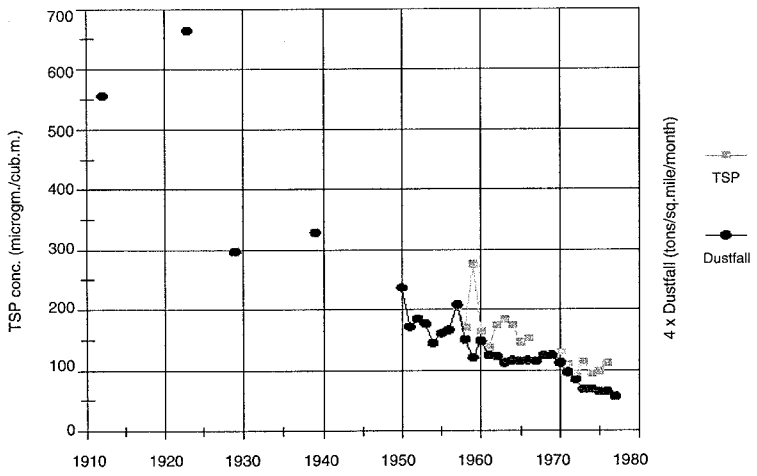
conventional wisdom—and the notion of a race to the bottom—empirical data show that much of this improvement came before federalization, or the implementation of the regulations which would eventually give it force.

The seemingly logical progression in environmental transitions for air pollution in the United States should not be mistaken for predestination. The transitions resulted from continually increasing levels of affluence and technology. But, as the broad sweep of history suggests, neither are inevitable. America was fortunate that its political and legal system supported the institutions that fostered economic growth and technological change. For the same reasons, many of the world's developed nations have gone through similar environmental transitions for various air pollutants over the last several years. Other nations, such as the erstwhile centrally planned economies, which lacked such institutions, have had the worst of all worlds—they are poorer and their environment is wretched. Their problems were further aggravated by the absence of democracy that provides a powerful incentive to decisionmakers to constantly monitor and improve the quality of the ordinary citizen's life.

Often disdaining—if not actively discouraging—economic growth, and sometimes rejecting new technologies, many environmentalists hold that lifestyle changes are essential to a cleaner environment. But economic growth and new technologies were indispensable to bringing about the various environmental transitions without which air quality and the quality of life would have been even poorer than it was a generation or more ago. The need for fiscal resources and new technologies is not diminished either in the United States or worldwide.

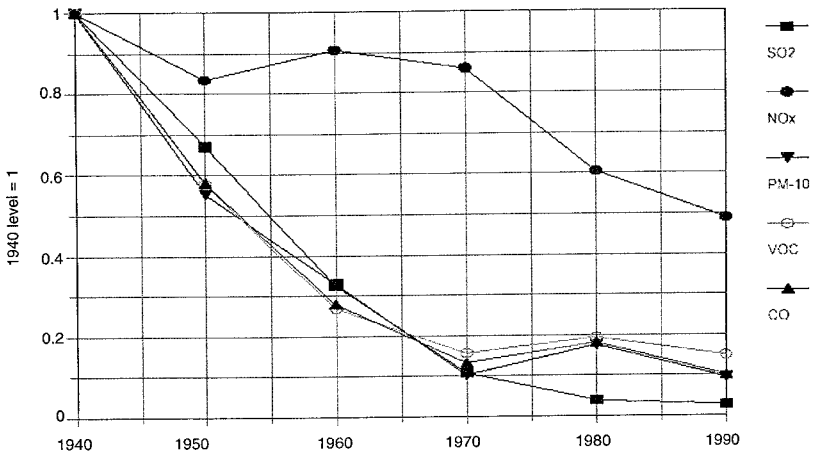
A 1997 United Nations Development Program study estimated that $300 billion to $600 billion is needed worldwide for pollution control projects by the year 2000. As the world's future environmental problems become more challenging, there will be an even greater demand for fiscal resources to research, develop, and implement new technologies to bring about environmental transitions for those problems. Thus, one of the keys to environmental progress is to nurture the institutions that bolster economic growth and technological change in order to move societies further to the right toward—and beyond—their environmental transitions.

Figure 1 **Pittsburgh, Dustfall, and Total Suspended Particulates 1912 to 1977**



Source: Cliff I. Davidson, "Air Pollution in Pittsburgh: A Historical Perspective," *Journal of the Air Pollution Control Association* 29 (1979): 1035-1041.

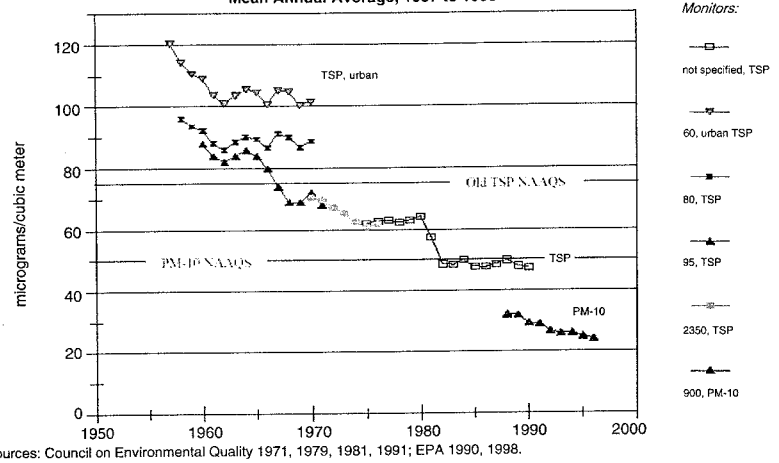
Figure 2 **Indoor Air Quality, 1940 to 1990**
(using as a proxy residential emissions per occupied housing unit)



Sources: *Historical Statistics of the United States* 1975; EPA 1995; *Statistical Absract* 1992.

Figure 3

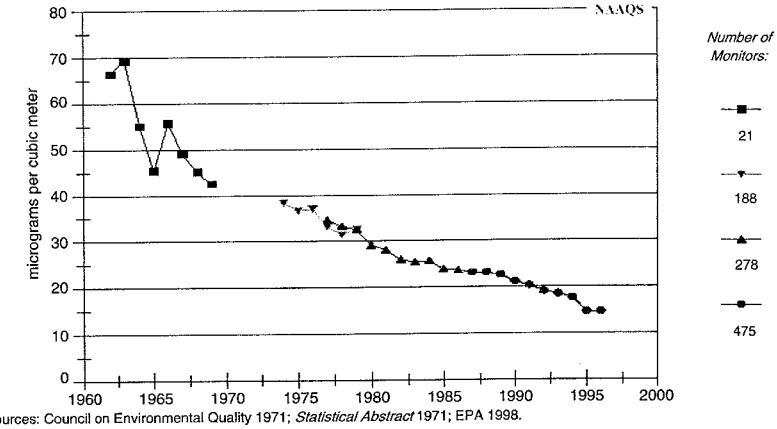
TSP and PM-10
Mean Annual Average, 1957 to 1996



Sources: Council on Environmental Quality 1971, 1979, 1981, 1991; EPA 1990, 1998.

Figure 4

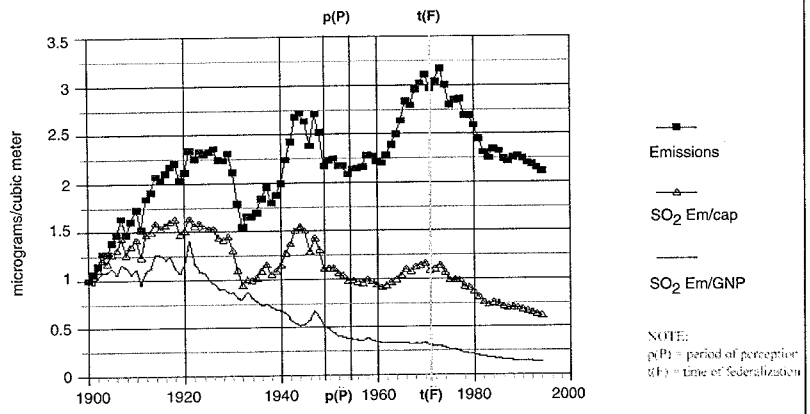
Ambient SO_2 Concentrations
Mean Annual Average, 1962 to 1996



Sources: Council on Environmental Quality 1971; *Statistical Abstract* 1971; EPA 1998.

Figure 5

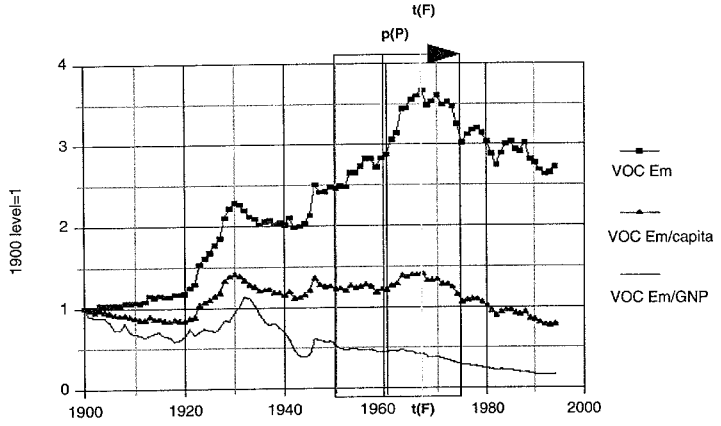
Sulfur Dioxide, 1900 to 1994
Emissions, Emissions/GNP, and Emissions/capita



Sources: EPA 1995; *Historical Statistics of the United States* 1975; *Statistical Abstract* 1995, 1996.

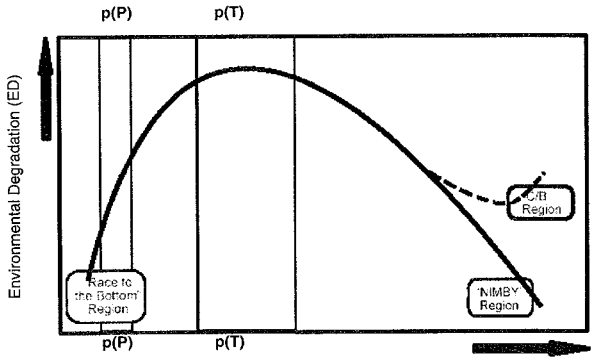
Figure 6

Volatile Organic Compounds, 1900 to 1994
Emissions, Emissions/GNP, and Emissions/capita



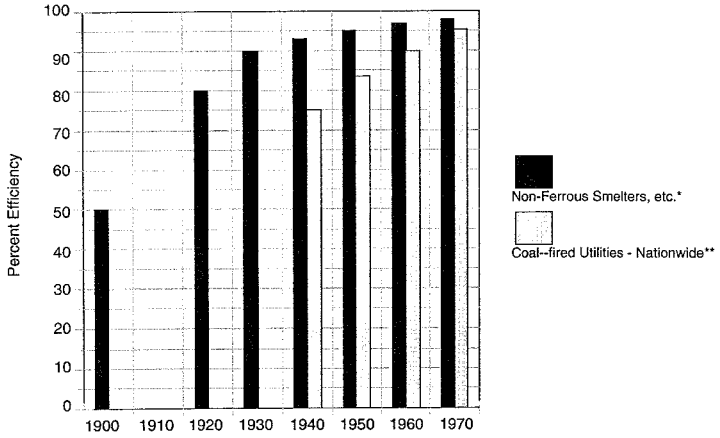
Source: EPA 1995; *Historical Statistics of the United States* 1975; *Statistical Abstract* 1995, 1996.

Figure 7 The Environmental Transition



Source: Indur M. Goklany, *Clearing the Air: The True Story of the War on Air Pollution*, to be published by Cato Institute.

Figure 8 Dust Collection Efficiency 1900 to 1970



Source: Tarr 1996; Moore 1966.
*for the Hudson-Raritan basin
**the 1970 figure is actually for 1966

CATO Today's Commentary

November 23, 1999

Clearing the Air

by Indur M. Goklany

Indur M. Goklany is the author of Clearing the Air: The Real Story of the War on Air Pollution, *published this month by the Cato Institute.*

Here in the United States, the air is generally cleaner today than it has been in many decades. Conventional wisdom credits this to the federal government's intervention in air pollution control in 1970. That federalization was justified by the claim that air quality was worsening because states were engaged in a "race to the bottom," sacrificing the environment in the competition for jobs and economic growth. That rationale has since been extended to justify Washington's top-down micromanagement of environmental regulation in general.

A fresh analysis of nationwide air quality and emissions data from the Environmental Protection Agency shows that air quality was already improving rapidly before federalization. The improvements were especially pronounced in urban areas, which had the worst pollution problems. Sulfur dioxide emissions declined 40 percent between 1962 and 1969. Smog, a problem first and foremost in the Los Angeles area, had been lessening in that region since the 1950s.

National emissions per dollar of gross national product peaked in the 1920s for sulfur dioxide, the 1930s for the volatile organic compounds and nitrogen oxides that produce smog, and the 1940s or earlier for particulate matter and carbon monoxide. At least 70 percent of the reductions between those peaks and the 1997 levels predated federalization.

Actual data refute claims of a "race to the bottom" and prove that the air was not getting worse in the years before federalization. Furthermore, federalization seems not to have accelerated declines in emissions or improvements in air quality for the most important pollutants.

Another justification for federalization is that pollution can have interstate impacts, but 30 years of experience show that federalization does not guarantee successful solutions to interstate problems such as acid rain.

Moreover, several international environmental agreements indicate that cross-boundary problems can be addressed collegially, without imposed solutions from above.

The rise and subsequent decline of air pollution during this century tracks well with the premise that states continually strive to improve their quality of life. In the early stages of economic development, societies focus on becoming wealthier so that they

can better afford basic public health and social services like sewage treatment, electricity and hospitals.

During this period, the environment suffers. Initially, the "race to the top" of the quality of life is mirrored in a "race to the bottom" of environmental quality.

To continue to improve a society's quality of life, more resources must be devoted to solving environmental problems. Increased wealth and technological advances makes this task easier. Thus, environmental degradation is first arrested and then reversed; that is, society goes through an environmental transition. After the transition, greater wealth and technology improve rather than worsen environmental quality. This is borne out in America's environmental evolution: the first improvements came voluntarily when prosperous households, businesses and industries started switching from coal and wood to cleaner fuels like oil and electricity, and began installing more efficient technologies that conserved energy and raw materials.

Since the rationale for federalization is weak and the nation is past its environmental transition, devolution of responsibility for air quality to the states is unlikely to roll back past gains. To ensure that further improvements in environmental quality and the quality of life go hand in hand, environmental requirements should be fine-tuned to each state's special circumstance, something impossible with one-size-fits-all federal regulations. Moreover, the current command-and-control, pollutant-by-pollutant approach should be replaced with one that would minimize overall risks to public health and welfare. Emissions trading should be broadened to allow trading across pollutants. Trading should encourage not just emission reductions but reductions in risks to health and welfare.

In combating intrastate pollution, the federal government should become an equal partner with states, with Washington setting idealized goals and states determining their own schedules and control measures to attain those goals. This is only appropriate since they will be the major winners or losers from their own actions (or inaction).

Solutions to interstate pollution problems should be negotiated by the affected states. Downwind states should be free to accept alternative risk reductions if they would provide greater benefits. For example, a downwind state might accept funding to provide some health insurance for its indigent population instead of additional scrubbers upwind. Because many factors affecting the quality of life are unquantifiable, optimizing the quality of life should be left to each state's political process.

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Mr. RYAN. Whether or not Goklany's historical scholarship is correct, current reality suggests that States are ready, willing, and able to exercise greater authority and responsibility for environmental protection.

States today are running most of the clean water programs, clean air programs, safe drinking water programs, and toxic cleanup programs Congress created.

According to the Environmental Council of States, States conduct about 75 to 80 percent of environmental enforcement actions taken by the EPA and the States combined, including at least 97 percent of all enforcement inspections.

States also do most of the spending for environmental protection—a point that should not be overlooked—about $12.5 billion in fiscal year 1996, which is almost twice as much as the EPA's entire budget.

States are prolific environmental legislators, enacting over 700 environmental laws in 1997 alone, at least half of which dealt with programs not mandated by Federal law. Moreover, 80 percent of the States have at least one Clean Air Standard that exceeds the Federal minimum standard, according to a study by the Council of State Governments.

Clearly, Washington does not have a monopoly on environmental experience, wisdom, or talent. I am very eager to learn from those of you who have traveled great distances, who work in the environmental laboratories of democracy.

I would like to thank all the witnesses for participating in today's hearing.

[The prepared statement of Hon. Paul Ryan follows:]

Statement of Vice Chairman Paul Ryan

Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs

"Lessons from the Laboratories of Democracy:

Environmental Innovation in the States"

September 13, 2000

In the *Almanac of American Politics, 2000*, Michael Barone wrote, "the initiative in shaping public policy is leeching out of Washington, to the states, the localities, the private sector." Although Barone primarily had in mind State, local, and private sector achievements in welfare reform, crime reduction, and wealth creation, an impressive (albeit seldom publicized) shift in initiative from Washington to the States is also occurring in environmental policy. Today's hearing will showcase innovative environmental solutions that may surprise many of us in Washington -- solutions tested in the "laboratories of democracy," the States.

Today's panel of witnesses include some of America's leading environmental policy innovators. I am very pleased to welcome Langdon Marsh, Director of Oregon's Department of Environmental Quality; Jim Seif, Secretary of Pennsylvania's Department of Environmental Protection; Karen Studders, Commissioner of Minnesota's Pollution Control Agency; and Lisa Polak Edgar, Deputy Director of Florida's Department of Environmental Protection. Each of you has a major environmental success story -- or several such stories -- to tell. We are eager to learn why your agency instituted those reforms, what results you have achieved, and what lessons, if any, your experience offers for other State and Federal policymakers.

I would also like to extend a warm welcome to North Carolina Representative Joe Hackney, who chairs the National Conference of State Legislatures' Environment Committee, and Lynn Scarlett, Executive Director of the Reason Public Policy Institute. Mr. Hackney will, among other things, discuss what changes in national policy would encourage the kinds of environmental success stories our State agency witnesses will be sharing with us today. Ms. Scarlett's organization maintains the most comprehensive research program on State environmental innovation of any think tank in the country. Thank you for your intellectual leadership.

Finally, I would like to welcome our Minority witnesses, Erik Olson, Senior Attorney at the Natural Resources Defense Council, and Christopher Recchia, a Member of the Northeast States for Coordinated Air Use Management and Deputy Commissioner of the Vermont Department of Environmental Conservation.

Over the past 30 years, the United States has taken a largely top-down, command-and-control, one-size-fits-all approach to environmental protection. When the environmental problems facing this country were of the big and obvious variety -- "haystack" problems like burning rivers, soot-belching smokestacks, and haphazardly dumped toxic wastes -- the technologically prescriptive, centralized-from-Washington approach was feasible and reasonably effective.

However, after three decades, the old approach is beginning to produce diminishing returns and even, in some cases, counterproductive results. For example, Superfund was an extremely popular program when it was enacted. Today, most observers acknowledge, Superfund is mired in litigation, squanders billions of dollars, and yields little discernible benefit to public health. Another example is the oxygenate requirement for gasoline in the Clean Air Act Amendments of 1990. To meet that mandate, petroleum refiners put MTBE in the gasoline supply. Regrettably, MTBE is now contaminating groundwater in some areas of the country.

The original centralized, command-and-control approach cannot easily solve today's more elusive and dispersed, "needle in the haystack" issues, such as species habitat conservation, agricultural runoff, and watershed management. Yet, national priorities and methods have changed little since the Environmental Protection Agency (EPA) was founded in 1970, with its major focus on point source pollution and traditional toxins.

While Federal environmental policy has largely remained static over the last several decades, State environmental agencies have been moving to fill the void. States are setting priorities, developing partnerships with the EPA and the private sector, and achieving measurable results. States are experimenting with incentive-based programs that foster technological innovation and encourage companies to go beyond mere compliance. In addition, States are basing environmental decisions on sound science, risk assessment, and other tools that maximize benefits with limited resources. Ultimately, States may be the key to successfully solving the environmental issues of the 21st century.

Of course, the topic of today's hearing is not without controversy. Some critics of State environmental performance warn that any shift of authority from Washington to the States will trigger a "race to the bottom." The critics fear that, absent rigorous control by EPA, the States will compete for business investment by lowering environmental standards and relaxing environmental enforcement. In part, such fears are based on the opinion that the States allowed or even promoted environmental degradation until President Nixon and Congress created the EPA in 1970 and federalized environmental policy. This reading of the historical record is questionable.

Recently, using EPA data, Indur Goklany, a manager of science and engineering in the U.S. Department of Interior, shows that air quality began to improve substantially in the decade before federalization, especially for pollutants, such as particulate matter and sulfur dioxide, which were generally recognized as public health problems at the time. Goklany further notes that between 1960 and 1970, the number of State air quality programs increased from 8 to 50, and many jurisdictions tightened their air quality standards during that decade. Such actions, some of which were quite innovative, look more like a race to the top than a race to the bottom. I would like to request that two of Dr. Goklany's papers be included in the hearing record.

Whether or not Goklany's historical scholarship is correct, current realities suggest that the States are ready, willing, and able to exercise greater authority and responsibility for environmental protection. States today are running most of the clean water programs, clean air programs, safe drinking water programs, and toxic cleanup programs Congress created. According to the Environmental Council of States, States conduct about 75 to 80 percent of environmental enforcement actions taken by EPA and the States combined, including at least 97 percent of all enforcement inspections. States also do most of the spending for environmental

protection -- about $12.5 billion in Fiscal Year 1996, almost twice as much as EPA's entire budget.

States are prolific environmental legislators, enacting over 700 environmental laws in 1997 alone, at least half of which dealt with programs *not* mandated by Federal law. Moreover, 80 percent of the States have at least one Clean Air Standard that exceeds the Federal minimum standard, according to a study by the Council of State Governments.

Clearly, Washington does not have a monopoly on environmental experience, wisdom, or talent. I am eager to learn from those who work in the environmental laboratories of democracy, and I would like to thank all the witnesses for participating in today's hearing.

Mr. KUCINICH. Thank you very much, Mr. Chairman. I appreciate the fact that this hearing is being held on State innovations in environmental policy.

I welcome all the witnesses to our committee room.

Today we are going to hear from a few of the States that have taken the lead in finding new and innovative ways to more efficiently and effectively implement our environmental laws. Many of these programs are still in the testing phase; however, they hold a great deal of promise and I am looking forward to hearing about them.

We will hear about States that are shifting resources to regional offices that are better suited to address local issues, States that are shifting their focus to the results of environmental protections instead of the process, States that are focusing on incentives instead of punishment, and States that are working together to implement changes that would not be feasible if only applied within one State's borders. All of these ideas are worth exploring and I look forward to hearing about them.

Mr. Chairman, because different States have different environmental problems, they should be able to target local priorities. In addition, States often have expertise in local issues and can more easily consult with the people in the affected community. They are laboratories for new ideas—some of which will work well for that one State and other ideas which may improve environmental performance across the Nation.

In many respects, the Federal Government has recognized the important role of the States. A number of Federal laws call for the Environmental Protection Agency to delegate to the States primary responsibility for program implementation. States have assumed responsibility for approximately 70 percent of the programs eligible for delegation. The administration has passed a federalism Executive Order encouraging State participation in the development and implementation of Federal law. In addition, it has established programs like the National Environmental Performance Partnerships System which provide greater flexibility and encourage better communication between the Federal and State governments. Although there is still room for improvement, we should not forget that the current system of national environmental laws has been a great success.

Mr. Chairman, many States have invested in a cleaner environment by passing laws that are more stringent than Federal minimum standards. And others, like the ones we will hear about today, are taking the lead in developing environmentally sound innovations. Nevertheless, not every State has made the same commitment to a cleaner environment. In fact, by 1995, 19 States have adopted some version of a clause which prevents the States from adopting rules that are more stringent than Federal standards. States often need a nudge from the Federal Government. For instance, when there were significant outbreaks from cryptosporidium in tap water, and over 100 people died, no State adopted a cryptosporidium standard until the Federal EPA mandated one.

We should not forget the basic fact that pollutants are carried in the air, rivers, lakes, rain, crops and otherwise across State lines.

And, in some cases, the polluter causes greater damage in neighboring States than in its own home State.

The Federal Government needs to stay involved in environmental protection in order to: address interstate transportation of pollution; establish and enforce minimum standards; ensure a level playing field so one State does not gain an unfair advantage over others; help States develop environmental protection plans that are effective and efficient; provide a means of sharing technologies and expertise; enforce the law when local political pressures or the lack of resources or expertise makes it difficult for States to enforce the law; and prevent a "race to the bottom" when States lower environmental standards in order to court business.

In conclusion, Mr. Chairman, I look forward to hearing about important State innovations and what we can do to encourage States to develop and implement successful ideas. However, I would like to do so in a manner that recognizes the Federal Government's critical role in protecting the public health and the environment.

I ask unanimous consent to include relevant materials in the record and I thank the chair.

Mr. RYAN. Without objection.

[The prepared statement of Hon. Dennis J. Kucinich follows:]

Statement of Rep. Dennis Kucinich
Ranking Minority Member
September 13, 2000
State Environmental Innovations

Mr. Chairman, thank you for holding this hearing on state innovations in environmental policy.

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forward to the testimony.

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The federal government needs to stay involved in environmental protection in order to:

*** address interstate transport of pollution,**

*** establish and enforce minimum standards,**

*** ensure a level playing field so one state does not gain an unfair advantage over others,**

*** help states develop environmental protection plans that are effective and efficient,**

*** provide a means of sharing technologies and expertise,**

*** enforce the law when local political pressures or the lack of resources or expertise makes it difficult for states to enforce the law, and**

*** prevent a "race to the bottom" when states lower environmental standards in order to court business.**

In conclusion, Mr. Chairman, I look forward to hearing about important state innovations and what we can do to encourage states to develop and implement successful ideas. However, I would like to do so in a manner that recognizes the federal government's critical role in protecting the public health and the environment.

Mr. Chairman, I ask unanimous consent to include relevant materials in the record.

I am looking forward to hearing from the witnesses.

Mr. RYAN. Mr. Sanders.

Mr. SANDERS. Thank you very much, Mr. Chairman, for holding this important hearing. I am especially pleased that a fellow Vermonter will be testifying on your panel, Chris Recchia, the deputy director of the Vermont Air Pollution Program.

Mr. Chairman, I realize that the focus of this hearing will be on environmental initiatives in the States. The premise, as I understand it, is that giving States as much flexibility as possible in combating pollution is the best approach to take. Mr. Chairman, I do not fully believe in this premise and let me tell you why.

Nationwide, more than 30 percent of residents still live in regions with poor air quality. Vermont is no exception. Even though Vermont has some of the toughest air quality standards in the Nation, our health and the health of our forests, lakes and streams continues to suffer from acid rain, ozone haze, mercury and dioxin deposition.

This pollution is not coming from the State of Vermont. So the State of Vermont could do everything that it possibly could to correct the problem. It would not succeed. This pollution is a result of pollution from outdated fossil fuel power plants in different States.

So, I think that is why we need a national perspective as well as encouraging States to develop their own local initiatives.

In other words, the biggest threats to Vermont's environment are not under the control of Vermont. In some ways they are, but often they are not. They arrive in the winds in the form of air pollution emitted in other States.

Vermonters have a proud tradition of protecting our environment. Yet despite this proud tradition of environmental stewardship, we have seen how pollution from outside our State has affected our mountains, lakes and streams.

Acid rain caused from sulfur dioxide emissions outside Vermont has drifted through the atmosphere and scarred our mountains and poisoned our streams.

Mercury has quietly made its deadly poisonous presence into the food chain of our fish to the point where health advisories have been posted for the consumption of several species.

Despite Vermont's own tough air laws and small population, the EPA has considered air quality warnings in Vermont that are comparable to emissions consistent for much larger cities.

Silently each night, pollution from outside Vermont seeps into our State and our exemplary environmental laws are powerless to stop or even limit the encroachment.

The Clean Air Act of 1970 was a milestone law, which established national air quality standards for the first time and attempted to provide protection of populations who are affected by emissions outside their own local and State control.

While the bill has improved air quality, there is a loophole in the law that needs to be fixed. More than 75 percent of the fossil fuel fired plants in the United States began operation before the 1970 Clean Air Act was passed. As a result, they are "grand fathered" out from under the full force of its regulations.

To end this loophole, I am a co-sponsor of the Clean Smokestacks Act introduced by Mr. Waxman. I am also a co-sponsor of the Clean

Power Plant Act introduced by Mr. Allen to crack down on mercury pollution. Congress must pass these laws as quickly as possible.

Another important Federal environmental regulation that must be strengthened deals with the Corporate Average Fuel Economy [CAFE] standards. These standards are especially important today when American cars and light trucks are responsible for consuming 40 percent of the oil used in the United States.

Twenty-five years ago Congress passed, with bipartisan support, the simple provision requiring cars and light trucks to go further on a gallon of gasoline. This sensible and efficient law, which was signed by President Gerald Ford, created a standard for the number of miles per gallon that cars and trucks must meet.

In retrospect, it was one of the most successful environmental laws of all time, a Federal law signed by a Republican President.

CAFE standards helped curb climate change by keeping millions of tons of carbon dioxide out of the atmosphere. They also cut pollution, improve air quality and help polluted regions achieve the goals of the Clean Air Act. CAFE standards provide an efficient and relatively painless way of achieving a cleaner and safer environment for all Americans.

The CAFE standards program is a bargain for Americans because it saves them money. I think most of us know that.

Let me just conclude, Mr. Chairman, by suggesting that I think it is important that we learn what various States around this country are doing, that we learn from each State. I am proud of the environmental record of the State of Vermont.

But I do wish to emphasize that while we learn from each State, it would be irresponsible to suggest that the Federal Government does not have a very, very important role in protecting our environment.

I thank you, Mr. Chairman, for the opportunity to make those remarks.

Mr. RYAN. I thank you, Mr. Sanders. I thank you for your passion on this issue as well.

I would also ask unanimous consent that Representative Chenoweth-Hage's statement be included in the record. Without objection.

[The prepared statement of Hon. Helen Chenoweth-Hage follows:]

Statement of Congressman Helen Chenoweth-Hage
Subcommittee on National Economic Growth,
Natural Resources and Regulatory Affairs
Committee on Government Reform
B377 Rayburn House Office Building
September 13, 2000

Thank you Chairman McIntosh, I would like to thank the Subcommittee for holding this hearing, "*Lessons From the Laboratories of Democracy: Environmental Innovation in the States.*" This is a timely and important topic.

As you know, I come from the First District of Idaho and therefore have an intense interest in environmental regulation by the federal government. Recently, my own district and state witnessed a tragedy caused by a one size fits all policy of the federal government. I'm sure that you know I am referring to the forest fires that devastated my state and the West in general. If the federal; government had simply allowed Idaho to manage the land within its borders, this would not have occurred. Reasonable thinning and selective logging would have prevented the devastation that we witnessed. My own Subcommittee on Forest and Forest Health had fifteen hours of hearing on this very topic. I was surprised that anyone was willing to defend the federal government's mismanagement of the forests.

Mr. Chairman, many people have noted over the years that federal environmental regulations often cause more problems than they solve. The requirement to include MTBE in gasoline is a perfect example. When initially formulated, this requirement was supposed to ensure cleaner air. Unfortunately, the warnings that MTBE would also cause groundwater contamination were ignored. Concurrently, some states had developed their own guidelines that would have moved the nation toward cleaner air without corrupting our groundwater. But, the were unable to implement this because a bureaucratic one size fits all policy was mandated by the federal government.

Furthermore, vast quantities of research have been conducted since the passage of the Clean Air Act that indicates this legislation may never have been needed in the first place. Clean, clear, hard science indicates that the most rapid advancements in clean air occurred *before* the passage of this act. It was only when this act was passed did the rate of cleaning the air diminish. Mr. Chairman, at this time I would like to ask unanimous consent to insert into the record two articles that explain the effects of the Clean Air Act.

Mr. Chairman, I am looking forward to hearing from our witnesses today and hearing about state based initiatives that have been successful in ensuring some true environmental reform. The quest for power through regulating is something that the federal government is clearly guilty of. As we saw in the Soviet Union, it is the nature of centrally-planned large-scale bureaucracies to fight innovation, fight decentralization, and to fight the distribution of power.

Mr. Chairman, I would like to thank you again for taking the time to examine these critical issues. Without leadership on these issues, the American people face a dark future where federally employed environmental puppeteers will be able to simply play loose and fast with our lives and health.

Thank you, Mr. Chairman.

Mr. RYAN. First, let me swear in all the witnesses. Would each of you please stand?

[Witnesses sworn.]

Mr. RYAN. We will begin with Representative Hackney.

STATEMENTS OF JOE HACKNEY, NORTH CAROLINA STATE REPRESENTATIVE, CHAIRMAN, ENVIRONMENT COMMITTEE, NATIONAL CONFERENCE OF STATE LEGISLATURES; LYNN SCARLETT, EXECUTIVE DIRECTOR, REASON PUBLIC POLICY INSTITUTE; JIM SEIF, SECRETARY, PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION; LANGDON MARSH, DIRECTOR, OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY; KAREN STUDDERS, COMMISSIONER, MINNESOTA POLLUTION CONTROL AGENCY; LISA POLAK EDGAR, DEPUTY DIRECTOR, FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION; ERIK OLSON, SENIOR ATTORNEY, NATURAL RESOURCES DEFENSE COUNCIL; AND CHRISTOPHER RECCHIA, DEPUTY COMMISSIONER, VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Mr. HACKNEY. Mr. Chairman and members of the subcommittee, I am Representative Joe Hackney, Speaker Pro Tem of the North Carolina House.

I appear before you today on behalf of the National Conference of State Legislatures. I currently serve as the Chair of NCSL's Environment Committee of the Assembly on Federal Issues.

NCSL is a bipartisan organization representing all State legislators from all 50 States and our Nation's commonwealths, territories, possessions, and the District of Columbia.

The focus of NCSL's policies and advocacy activity is the preservation of State authority, protection against costly unfunded mandates, the promotion of fiscal integrity and the development and maintenance of workable Federal-State partnerships.

I appreciate the invitation to speak to you today about the Federal-State relationship and the changes needed to assist States in further protecting and enhancing environmental quality.

Let me say first of all that NCSL urges the Federal Government to renew its commitment to the Federal-State relationship in environmental protection. For nearly 40 years, Federal environmental laws have recognized the primacy of State governments.

From the very first Federal law, Congress determined that States and local governments were in an optimal position to implement environmental standards that are established by the Federal Government.

States acting in partnership with the Federal Government play an indispensable role in a mutual effort to protect natural resources and combat environmental degradation and pollution.

New environmental problems have arisen and new approaches are required. Except for the amendments to the Safe Drinking Water Act of 1996 and the Clean Air Act in 1990, most of our major environmental acts were last visited in the 1980's.

Although during that time we have made great progress, a significant amount of pollution no longer comes from the end of a pipe, but from some other source. We think improvements are needed.

We want to urge Congress to use this hearing as the first step in a new commitment to the Federal-State partnership for the 21st century.

We urge Congress and the new administration to work with NCSL and its Assembly on Federal Issues to convene regular summits of State, Federal and local lawmakers, administrators and other stakeholders to identify areas of our Nation's environmental law that are outdated, ways in which current laws and regulations can be modernized, and tools to improve the Federal-State relationship.

It is time to move forward to the 21st century level in protecting our water and air. Together we need to identify smarter goals and strategies for keeping pollutants out of the water or air.

We need to make much more progress in reducing the emissions from power plants and other stationary sources.

We need to continue and expand upon the progress we have made in reducing mobile emissions. NCSL was a strong supporter of the move to low-sulfur gasoline. I might note that my State, North Carolina, was moving along on that track before EPA acted as well.

We need to pay more attention as a Nation to whether the ways in which we grow our economy can have positive rather than negative effects on environmental protection. For example, we need to do a better job of preserving farms and open space as we grow.

Together, we can move so much further ahead. The people expect us to lead in these matters and NCSL would be pleased to be a part of this effort.

Let me make a few points in summarizing the rest of my testimony. No. 1, we commend the EPA in its efforts to encourage States to develop innovative approaches. We don't always find that those efforts work or are realized, but we support a more formalized working relationship between the States and the EPA which recognizes the role of the States and their agencies as partners in the decisionmaking process as contemplated in the original environmental statutes.

Second, and this is important, I think, in the context of what others are going to say today, we recognize and support the role of the Federal Government in establishing uniform national environmental standards. But States must always have the right to go beyond these standards and use their creativity to pursue novel solutions to identified problems.

In fact, in North Carolina our concentrated animal feeding operations laws are more comprehensive then EPA's. And we are moving ahead with research at the North Carolina State University to try and do the best job we can with that problem.

Third, improved flexibility. States have a compelling interest in the uniform application and enforcement of Federal laws in order to prevent pollution havens and prevent States with lax enforcement from obtaining unfair economic advantages.

But, States need as much administrative flexibility as possible, consistent with superior protection of our environment to achieve environmental protections. Several examples are given in the written text.

Next, let me mention just briefly a greater Federal role when it comes to interstate pollution. We have to address interstate pollution. We are, at our December meeting, going to take up some aspects of that problem. We invite the participation of the Congress.

We oppose any preemption attempts. We do not believe centralized decisionmaking in Federal courts for compensation for land use and other regulatory actions represents something that you should get into. That would be a major threat to our constitutional system of federalism.

Improving the efficiency of the State and local process is an issue for State legislatures, not the Congress.

We continue to oppose unfunded mandates.

Let me just say in closing that the Federal-State partnership has been in many respects a success story. The public interest has been well served.

Environmental standards—health-based air quality standards, water quality criteria which supports swimming, fishing, drinking and biological needs—all of these have given States environmental objectives that they can share, and each State can then implement programs by delegation to solve those problems.

I appreciate the opportunity to appear before you today on behalf of the National Conference of State Legislatures. I welcome your questions on this testimony.

[The prepared statement of Mr. Hackney follows:]

NATIONAL CONFERENCE *of* STATE LEGISLATURES

The Forum for America's Ideas

TESTIMONY OF
REPRESENTATIVE JOE HACKNEY
SPEAKER PRO TEM, NORTH CAROLINA HOUSE OF REPRESENTATIVES
CHAIR, NCSL ENVIRONMENT COMMITTEE

ON BEHALF OF
NATIONAL CONFERENCE OF STATE LEGISLATURES

REGARDING
LESSONS FROM THE LABORATORIES OF DEMOCRACY: ENVIRONMENTAL INNOVATION IN THE STATES

BEFORE THE
SUBCOMMITTEE ON NATIONAL ECONOMIC GROWTH, NATURAL RESOURCES, AND REGULATORY AFFAIRS

OF THE
COMMITTEE ON GOVERNMENT REFORM

SEPTEMBER 13, 2000

Congressman Ryan and members of the Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs, I am Representative Joe Hackney from North Carolina. I appear before you today on behalf of the National Conference of State Legislatures (NCSL). I currently serve as the Chair of NCSL's Environment Committee of the Assembly on Federal Issues.

NCSL is a bipartisan organization representing all state legislators from all 50 states and our nation's commonwealths, territories, possessions and the District of Columbia. The focus of NCSL's policies and advocacy activity is the preservation of state authority, protection against costly unfunded mandates, the promotion of fiscal integrity and the development and maintenance of workable state-federal partnerships. I appreciate the invitation to speak to you today about the federal-state relationship and changes needed in federal laws, regulations and policies to assist states in further protecting and enhancing environmental quality.

The State-Federal Relationship in the 21st Century.

First and foremost, NCSL urges the federal government to renew its commitment to the federal-state relationship in environmental protection. For nearly 40 years, federal environmental laws have recognized the primacy of state governments. From the very first federal law, Congress determined that states and local governments were in an optimal position to implement environmental standards that are established by the federal government. Thus states, acting in partnership with the federal government, play an

indispensable role in a mutual effort to protect natural resources and combat environmental degradation and pollution.

But, new environmental problems requiring new approaches have appeared without sufficient review of the laws intended to deal with them. Except for the amendments to the Safe Drinking Water Act of 1996 and the Clean Air Act in 1990, most of our major environmental acts were last visited in the 1980s—the Clean Water Act in 1987, Superfund in 1986 and RCRA in 1984. Although during that time we have made great progress in reducing point source pollution, a significant amount of pollution no longer comes from the end of a pipe at a factory, or publicly owned treatment works, but from pollution draining from parking lots, lawns and farms—nonpoint sources.

Clearly, improvements are needed.

NCSL urges Congress to use this hearing as the first step in a new commitment to the federal-state partnership for the 21st century. NCSL urges Congress and the new Administration to work with NCSL and its Assembly on Federal Issues to convene regular summits of state, federal and local lawmakers, administrators and other stakeholders to further identify: 1) areas of our nation's environmental law that are outdated (for instance, the Low-Level Radioactive Waste Policy Act of 1980 and the Low-Level Waste Policy Amendments Act of 1985, which NCSL has examined and found to be out of step with current needs); 2) specific goals to address environmental protection in the 21st century; 3) ways in which current laws and regulations can be

modernized; and 4) tools to improve the federal-state relationship on environmental protection.

It is time to move forward to the 21st century level in protecting our water and air. Together we need to identify smarter goals and strategies for keeping pollutants from the waste stream so that they never reach our water or air. We need to make much more progress in reducing the emissions from power plants and other stationary sources. We need to continue and expand upon the progress we have made in reducing mobile emissions. (NCSL was a strong supporter of the move to low-sulfur gasoline.) And, we need to pay more attention as a nation to whether the ways in which we grow our economy can have positive rather than negative effects on environmental protection. For example, we need to do a better job of preserving farms and open space as we grow. We need to take advantage of best or model practices implemented by states and local governments. Together, we can move so much further ahead. The people expect us to lead in these matters, and NCSL would be pleased to be a part of this effort.

Communication with Congress and the EPA.

NCSL commends the Environmental Protection Agency's (EPA) Office of the Administrator and its efforts to encourage states to develop innovative approaches to new environmental concerns. The establishment of Project XL and the National Environmental Performance Partnership System (NEPPS) are just two examples of programs established by the EPA in an attempt to provide states the needed flexibility to

improve environmental quality. But, in many cases, the benefits of these programs cannot be fully realized.

As previously stated, NCSL encourages Congress to modernize and improve our nation's body of environmental law, taking into consideration the fact that states have unique needs and often are best suited to develop their own solutions to meet federal standards.

NCSL urges Congress and the EPA to communicate regularly and directly with state legislators on proposed federal legislation and regulations to ensure state input and to anticipate and provide for the technical assistance and funding necessary for compliance.

NCSL acknowledges that the President's Executive Order 13132 on Federalism has resulted in improved communication between the EPA and states. The benefits of federalism, however, have not been fully recognized. Although over 70 percent of environmental programs have been delegated to the states, under the current regulatory process, states' concerns are often ignored or subordinated. NCSL supports a more formalized working relationship between states and the EPA which recognizes the role of states and their agencies as partners in the decision making process as contemplated in the original federal environmental statutes.

Uniform National Environmental Standards.

NCSL recognizes and supports the role of the federal government in establishing uniform national environmental standards, but states must always have the right to go beyond these standards and use their creativity to pursue novel solutions to identified problems.

NCSL urges Congress to ensure that effluent and emission standards and other control strategies are performance-based. And as strategies are being developed to meet new environmental concerns, NCSL encourages Congress and the EPA to pay particular attention to the voices of the states' expertise and experience, as well as the stakeholders and the public at large.

One good example of the value of the states' experience is in the regulation of concentrated animal feeding operations (CAFOs). Under the Clean Water Act, animal feeding operations that have more than 1,000 animal units qualify, on size, as CAFOs and are required to adhere to Section 402 permitting requirements. In an environmentally sensitive area such as the wetlands of coastal North Carolina, it may be appropriate for the state permitting authority to work with operators of these facilities to develop stricter or more comprehensive nutrient management plans, regulate or prohibit lagoon discharges and exercise strict oversight of the facility. By contrast, a Midwestern state such as Illinois may wish a different approach. In fact, in North Carolina our CAFO program is more comprehensive than the EPA's program. We regulate CAFOs down to 250 animal units. In our state, we have learned that arbitrary size limits are not appropriate.

The federal government should adopt performance-based standards that prescribe the end to be accomplished and leave the means of obtaining the end up to individual states. In return for this level of autonomy, the federal government should adopt a system of performance audits and objectively quantifiable benchmarks that would allow the federal government to certify state performance results in meeting uniform minimum federal standards.

NCSL understands that EPA will propose rules in December of this year to: 1) expand the Effluent Limitations Guideline to cover land application; 2) include dry poultry operations and stand alone immature animal operations; 3) eliminate the 25 year, 24 hour storm exemption; 4) require permit nutrient plants similar to Comprehensive Nutrient Management Plans called for in the Join USDA/EPAUnified Strategy; 5) eliminate the term "animal unit;" 6) eliminate the mixed animal multiplier; 7) include facility closure requirements; and 8) include a duty to apply (if defined as a CAFO the facility must apply for a permit). NCSL calls for close federal-state cooperation in the adoption of these rules.

NCSL urges Congress and the Administration to continue to work with the states to define environmental and health problems associated with CAFOs to identify and establish responsible effluent control options. Further research, such as that under way at North Carolina State University, is vital to this effort, and Congress should support these efforts with research funding. Federal CAFO regulations should only be modified if

existing requirements are proven to be inadequate when properly enforced. Existing state programs should be taken into account at all times. Any new or amended federal water quality rules that impose new responsibilities on states with respect to CAFOs should also be accompanied by adequate federal funding and should not preempt existing state programs. States should retain the right to have standards that are equal to or more stringent than the national rules.

Improved Flexibility.

As seen from the example above, states need the necessary flexibility to develop programs that meet their unique needs. Let me be clear that NCSL is not asking for flexibility in the federal standards themselves. States have a compelling interest in the uniform application and enforcement of federal laws in order to prevent pollution havens and to prevent states with lax enforcement from obtaining unfair economic advantages. States need as much administrative flexibility as possible, consistent with superior protection of our environment, in order to achieve environmental protections in the most cost effective and efficient manner.

For example, small rural states often face obstacles—fewer resources and an aging infrasture—when it comes to compliance with regulatory mandates. Nonetheless, all states are subject to the same requirements. But through the use of innovative approaches, these same states are successfully addressing their environmental concerns at a lower cost.

Take Nebraska as an example. Nebraska's Mandates Management Initiative assists the local governments to comply with state and federal environmental laws and regulations in the most cost-effective manner. Just one example of the program's successes includes a water conservation strategy in the village of Beerer. Instead of adding additional well capacity and wastewater treatment capacity at a cost of $600,000 the village is looking to reduce total water usage by up to 45 percent.

NCSL encourages Congress to provide states the needed authority to seek approval from the EPA for alternative programs to those mandated under the federal authorizing statute, but only where it is clear that superior and enhanced environmental results can be achieved.

States need to be provided more options and flexibility in order to use limited staff and resources more cost effectively, targeting these resources to high-priority issues, so long as we continue to move toward better environmental protection.

Other examples of innovative state programs include:

New Jersey's industrial facility permitting programs that combines air, water and hazardous waste permits into a single permitting process.

Pennsylvania has established a number of initiatives to assist in the cleanup of brownfields.

- The Industrial Sites Reuse Program provides loans and grants to municipalities and private entities for site assessment and remediation. A maximum of $200,000 is available for site assessment, or $1 million for remediation per year; all require a 25% match. Loans carry a 2% rate for terms up to 5 years (for assessments) or 15 years (for remediation).
- The Infrastructure Development Program provides public and private developers with grants and loans for site remediation, clearance, and new construction, up to $1.25 million per project at 3% interest for 15 years.
- The Brownfield Inventory Grant (BIG) program grants up to $50,000 to cities and development authorities to carry out brownfield inventories.
- The Keystone Opportunity Zones are newly designated areas (economically depressed) where all property taxes at a brownfields redevelopment site may be forgiven for up to 12 years.
- The Job Creation Tax Credit Program provides a tax credit of $1000 per new job created at a brownfield site to firms who increase employment by 25 jobs or 20% within three years from start date.

The **Montana** Legislature has enacted two innovative state Superfund-related statutes. The Voluntary Cleanup and Redevelopment Act (VCRA) allows a facility required to undergo remediation to use a voluntary cleanup process as an alternative to the more stringent requirements under the state's Superfund law. To be eligible, the applicant must

prepare an environmental assessment of the site, propose a remediation plan, and obtain the written consent of the current owners of the facility. The Montana Department of Environmental Quality (DEQ) has the flexibility to accept different cleanup level options, which may be less than for the property's highest and best use. The incentives for the applicant include:

- DEQ will not take remediation actions if the applicant has an approved voluntary cleanup plan and is diligently implementing the plan.
- A person does not have to be a potentially liable person (PLP) to start cleanup, which allows a potential purchaser of the land to have a role.
- Liability protection is provided.
- There is an expedited review and approval process.
- The voluntary cleanup plan is less expensive to prepare than a traditional Superfund plan.
- The applicant submits proposed cleanup levels.
- There are specific closure provisions, which provides greater certainty to the person undertaking cleanup activities.

The second statute, the Controlled Allocation of Liability Act (CALA), addresses remediation of orphan sites (those for which a portion of the liability is attributable to a bankrupt party). CALA provides an alternative to the strict, joint and several liability provisions found in state Superfund laws, which require PLPs to pay the total cleanup costs. Under CALA, a PLP who pays the cleanup costs of the orphan's share of expenses can seek reimbursement from a state fund (currently capitalized at $3 million).

And in my own state, **North Carolina**, in 1996 we established the Clean Water Management Fund to be used to improve water quality by acquiring wetlands and stream buffers and by stream restoration. This year the legislature increased appropriations to the Fund from $30 million per year to $100 million per year over the next three years. An increased federal role in funding such efforts is needed.

NCSL urges Congress and the EPA to provide the states with the regulatory tools, incentives or financial support to further their efforts. Imagine the progress the state of North Carolina could make if our federal partners provided the Clean Water Management Fund with a $1 to $1 match. I ask the Congress to provide such a match.

Federal law, for lack of flexibility, sometimes impedes our progress. Take brownfields as an example. States have primary responsibility for brownfields redevelopment programs. States should be allowed more flexibility to tailor programs to meet their unique needs

In the absence of a change in the federal law, however, states have difficulty in immunizing a property owner or developer from liability or a future cleanup responsibility. As a result, clean up and redevelopment opportunities are lost as well as new jobs, new tax revenues, and the opportunity to manage growth.

We have had numerous brownfields bills go nowhere the past two Congresses—yet there is consensus that "something" must or should be done. We stand ready to assist in finding a solution.

When Federal Law Controls.

A greater federal role is needed when it comes to interstate pollution. Take for example mercury pollution in Maine. Two-thirds of Maine's mercury pollutants come from out of state sources. And despite extremely strict state regulations, all of its lakes post warnings to the effect that women of childbearing age and children should not eat the fish from those lakes or ponds. Although one solution is a source reduction approach that eliminates mercury from consumer products, states have a tough time intervening in those markets (although states such as Vermont, Minnesota and now Maine are doing just that by regulating mercury lamps, automobiles, thermometers and other products). Moreover, states attempting such regulations often face challenges by the industry based on preemption and interstate commerce arguments.

NCSL urges Congress to work with the states—either individually or regionally--to develop solutions to this growing problem. Our members will be discussing the issue of interstate transport of pollutants during our winter meeting of the Assembly on Federal Issues and Assembly on State Issues, here in Washington, December 12-15. We welcome the participation of Congress in those discussions.

Prohibit Preemption of State Law.

In order to ensure state flexibility, NCSL opposes any attempt to preempt state law or any attempt to preempt or circumvent the authority of state courts and local administrative bodies. Proposed federal legislation that would centralize decision-making in the federal courts for compensation for land use and other regulatory actions represents a major threat to our Constitutional system of federalism. Improving the efficiency of the state and local judicial process is an issue for state legislatures, not Congress. Land use and regulatory policy must remain a primary responsibility of the states. The authority of state courts must be preserved.

Prohibit Unfunded Mandates.

NCSL also urges Congress to ensure that all environmental standards are based on sound public policy decision making, taking into consideration the financial impact on the states, and avoiding any unfunded mandates.

Let me again make it clear that NCSL supports Congress and the EPA setting uniform national environmental standards. But the states wish to make clear that appropriate federal resources to ensure successful implementation should be provided.

In addition, Congress and the EPA must ensure that states continue to receive adequate funding to cover all costs of program management including monitoring. This is particularly applicable for the states' drinking water and wastewater revolving funds.

The establishment of the State Revolving Funds (SRF), under the Clean Water Act, is just one example of an effective delegation of authority from federal to state governments while providing funds to meet mandates. Instead of the federal government providing grants to municipalities to fund wastewater treatment plants, the Fund provides seed money to states for low-interest loans to local governments. During the first decade of the program (1987-1997), nearly 5,700 projects were funded. More than half of the states leveraged their SRF, generating an additional $8.4 billion in revenue for low-interest loans that typically carry interest 2.5 to 3.5 percent below the market average. The "State Loan Fund" (drinking water treatment revolving loan fund) established with the amendments to the Safe Drinking Water Act in 1996 further enhances states' abilities to use a flexible approach to cleaning up our nation's waters.

NCSL commends Congress for its passage of PL 104-4, the Unfunded Mandate Reform Act of 1995 (UMRA). UMRA has raised awareness to the problem of unfunded mandates, improved federal accountability and enhanced consultation between the federal government, states and localities.

NCSL recognizes, however, that UMRA does not solve all of the problems associated with unfunded mandates. Title II—requiring administrative agencies to consult with state governments and provide for regulatory accountability and reform—has been effective in improving our communications with the EPA but only marginally effective in reducing costly and administratively cumbersome rules and regulations on states and localities.

NCSL urges Congress to ensure full compliance with the federal assessment requirement under UMRA. Concerns have been raised over the EPA's cost benefit analysis process.

The EPA's recent TMDL rule is just one example. The TMDL initiative is a step forward, but the General Accounting Office (GAO) said on June 21, 2000, that it found in its review of the EPA's TMDL proposal, " ... limitations with EPA's economic analyses of the proposed regulations for the TMDL ... " and disagreed with EPA in that, "... the agency's analyses adequately supported its determination under the Unfunded Mandates Reform Act of 1995 that more detailed analyses of costs, benefits, and alternatives were not needed ..." The GAO disagreed with EPA's conclusion that the annual costs of the regulation would not exceed the $100 million threshold set forth in UMRA. This matter merits revisiting.

NCSL also urges Congress to examine the role of the regional EPA offices. The opportunity may exist to eliminate duplicative efforts, thereby making additional resources available to the states.

Improved Accountability and Enforcement.

NCSL does, however, recognize the challenge to maintain accountability. NCSL supports consistent, uniform and vigorous federal enforcement of environmental laws to deter non-compliant behavior and to reward those who are acting in compliance with such laws.

At the same time, NCSL would like to ensure that enforcement does not become a goal, but remains a tool to reach our mutual goal---a cleaner environment. NCSL urges Congress to have the EPA establish a system to count more meaningful examples of enforcement—not just fines and penalties.

NCSL welcomes the EPA's oversight role. But state officials often struggle with our partnership. Let me give you an example. In North Carolina we have implemented a good strategy to reduce pollution in the Neuse River Basin---a 30 percent reduction in nitrogen over a five-year period. Three years ago when we first developed the program, we brought all of the stakeholders to the table, and we informed the EPA of our plans. We made some tough decisions, adopted some rules and are now three years into the program and we are on track to meet our goal.

Now, years into the program, the EPA has raised concerns and our program is subject to overhaul and review. In the context of an appropriate federal-state partnership, such concerns should be expressed at the outset of our aggressive state efforts to address our problems.

In closing, the federal-state partnership in environmental protection has been, in many respects, a success story. The public interest has been well served. Environmental standards—health based air quality standards; water quality criteria which support swimming, fishing drinking and biological needs; hazardous substance and waste standards—have given the states shared objectives to be achieved by the best approach

each state chooses. The federal government has the responsibility to make sure states do not permit damage to other states or protect powerful local interests at the expense of environmental protection.

This is a delicate balance that requires vigorous intergovernmental oversight. Only with this oversight and a commitment by state and federal agencies to keeping the environmental compact government has made with the people of this country can we assure a safe and healthy environment for this and future generations.

Thank you for this opportunity to appear before you today on behalf of the National Conference of State Legislatures. I welcome your questions on the testimony I have provided.

Mr. RYAN. Thank you, Representative Hackney.

I would like to ask each of the witnesses if we could try to confine your remarks to the 5-minute rule, since there are so many witnesses and we would like to have ample time for questioning.

Ms. Scarlett.

Ms. SCARLETT. Thank you, Congressman Ryan, Congressman Kucinich and Congressman Sanders and other members of the subcommittee for having these hearings.

My name is Lynn Scarlett. I am executive director of Reason Public Policy Institute, a Los Angeles-based nonpartisan research organization.

Briefly, we have experienced three decades, as many of the Members of Congress have pointed out here, of environmental policy since the first Earth Day. Those three decades have indeed yielded some successes, but there are four recurring policy challenges.

First, how can policies better ensure environmental innovations, both technological and institutional innovations?

Second, how can they better focus on results and take into account the many interrelated goals rather than a silo-by-silo or medium-by-medium approach?

Third, how can they better foster private stewardship, give us a Nation, if you will, of self-motivated environmental stewards?

Fourth, how can they better take into account local knowledge, what Congressman Kucinich referred to in terms of the knowledge of time, place, and circumstance, the devilish details of each location and each State?

In this context of questions, a new environmentalism is emerging and States are at the forefront of this discovery process. There are four features to this new environmentalism.

First is a move by the States toward greater flexibility in how they work with their regulated entities to achieve goals.

Second is a focus on performance rather than process as the primary point of emphasis.

Third is an enhanced role for incentives rather than punishment as the strategy of choice.

Fourth is a move toward place-based decisionmaking where the devilish details of local circumstances are evident.

I am going to give you just a brief thumbnail sketch of these innovations and defer to the State innovators to describe them in more detail.

First, on enhanced flexibility, I want to underscore that this is not about rollback, as Congressman Ryan noted. It is in fact quite the opposite. It is about extending the environmental performance envelope both upward and outward.

I just want to give you one example. New Jersey embarked on a facility-wide permitting program replacing 80 permits on a source-by-source basis at one plant with a single facility-wide permit.

This enabled a system-wide evaluation of that plant and through that the firm was able to reduce 8.5 million pounds of emissions in a very short time.

The second type of innovation is the move toward developing very robust performance indicators. Examples, of course, occur in

Florida. You have a representative from Florida here, and Oregon. I presume you will hear more about those efforts.

But these emphases on performance indicators have two key attributes that are worth noting. First is linking those indicators to priority setting and second is a broadening beyond enforcement bean counting to an emphasis on actual environmental performance.

The third type of innovation is in the realm of incentives. One example would be the Texas Clean Industries 2000 Program. In this program over 200 firms commit to a 50 percent reduction in toxic chemical emissions in a 2-year timeframe.

Other examples would be Illinois's Clean Break Amnesty Program in which the State offers compliance assistance to small emitters of pollution to help them clean up rather than taking a more permitting and fine-oriented approach.

Finally, there is a move toward place-based decisionmaking, particularly in the realm of watershed management. Watersheds involve often cross-boundary problems and challenges.

Two examples I would mention are both Minnesota and Idaho, which have pioneered effluent trading programs, in particular, between point sources, the old-fashioned focus on emissions that has been the center of attention, and nonpoint or farm run-off problems, with some substantial benefits.

Let me turn now to challenges and opportunities. I think there are three categories of challenges that these State endeavors face.

First is the set of challenges posed by fitting new programs within the old regulatory context. Perhaps in the question and answer period we can discuss in more detail what the fitting together involves.

The second set of challenges is technical, that is, developing performance indicators is, for example, not easy. How does one measure? How does one decide which indicators? Again, we can go into more detail later.

The third set is which stakeholders are at the decision table and how does one incorporate them, particularly as one moves to place-based decisionmaking.

The final question, and I think of most interest to the Congressman today, is whether Congress can be a facilitator of this new environmentalism. What changes, if any, are needed to encourage innovation and improve environmental performance?

It seems to me that while we have an efflorescence of State innovations, these are taking place in many respects in the interstices between the current regulations and to some extent at the margins.

To foster these initiatives, therefore, I think that we do need what Deborah Knopman of the Progressive Policy Institute called "transitional legal space." This is not the place for outlining those details, but I want to make two points.

First, one needs a delicate balance between asserting congressional commitment to flexibility and these innovative approaches, but resisting prescription and micro-management of that process, a recognition of what Congressman Kucinich noted about the different needs and different circumstances of each State.

Second, the expression of commitment may not be enough. One may need more resources, more Federal resources devoted to mon-

itoring and also to helping States invest in developing their indicators.

Finally, congressional action must recognize, as Congressman Sanders pointed out, that on the one hand there is a State leadership in new environmentalism, but on the other hand, one does need backstop enforcement mechanisms, cross-boundary facilitating role for Congress and for the EPA, continued monitoring and an information clearinghouse.

I think with that I will close and say that the new environmentalism is a discovery process and that is what these State efforts are largely about.

Thank you.

[The prepared statement of Ms. Scarlett follows:]

Lessons from the Laboratories of Democracy: Environmental Innovation in the States

Testimony before U.S. House
Committee on Government Reform
Subcommittee on
National Economic Growth, Natural Resources, and Regulatory Affairs

By Lynn Scarlett
Reason Public Policy Institute
Los Angeles, CA

Sept. 13, 2000

Congressman McIntosh, Congressman Ryan, and other members of the Subcommittee, thank you for inviting me here today. My name is Lynn Scarlett. I am Executive Director of Reason Public Policy Institute, a nonprofit, nonpartisan policy research organization located in Los Angeles, California.

Earth Day Legacy[i]

April 2000 marked the 30th anniversary of Earth Day. After three decades of environmental policy initiated since that first Earth Day, environmental policy is in a state of transition. The environmental model that emerged after the first Earth Day had four characteristics. First, the model engendered relatively prescriptive regulations that both set goals and required particular technologies and methods to meet those goals. Second, the model emphasized process over performance, with permits often serving as a proxy measure of performance. Third, the old model segregated environmental problems into discrete categories—air, water, and waste, for example—and addressed each separately. Finally, the model tended to focus on punishment—enforcement actions—as the central strategy for achieving environmental progress. "Sticks" rather than "carrots" predominated.

This regulatory strategy produced some successes. Open dumps were virtually eliminated. Phosphorous levels, a major indicator of water pollution, had fallen 40 percent or more in the Great Lakes by the 1990s contrasted with pollution levels in the 1970s. In Los Angeles, Stage One alerts for smog declined from more than 120 in 1977 to 13 in 1995.

But all is not well. The punitive model often engendered high conflict and litigation. The prescriptive emphasis tended to stifle innovations in pollution prevention and environmental restoration. Segregating problems into distinct categories sometimes resulted in unintended consequences—shifting of pollutants from one medium to another. And, finally, costs to achieve results were higher than might have been possible in a context that inspired innovation and wider implementation options.

Moreover, circumstances are changing, giving rise to increasing tensions between the regulatory model of the 20th century and the complex and dynamic 21st century context.

First, new kinds of problems are moving center stage. The old model focused primarily on "point" sources of pollution. By 2000, many remaining challenges took the form of "nonpoint" pollution from agricultural waste, storm water runoff, and so on.

Second, a new breed of industry had emerged that reflected the environmental values of the broader American culture. By the 1990s, industries had begun to move toward "knowledge-based" production and products and "closed loop" production, accelerating the process of dematerialization—using fewer resources for each good or service produced. "Industrial ecology"—the deliberate incorporation of environmental values into product-design and process decisions—began to flourish. In this context, a survey of large American corporations showed that 77 percent cited pollution prevention as an important business strategy.

Architects of environmental policy thus face a new "problem set." There is a growing mismatch between permit-focused compliance and the reality of complex, often dispersed problems. There are growing tensions between prescriptive regulations and the broadening press for fast-paced innovation within firms and on farms and ranches. Finally, the punitive model has limited scope for inspiring environmental excellence—a nation of self-motivated environmental stewards.

Put another way, four recurring challenges confront environmental stewards in both the public and private sectors:

- How can policies better ensure environmental innovations?
- How can policies better focus on results and take into account simultaneously many interrelated goals and complexity of the physical world?
- How can policies better foster private incentives for stewardship?
- How might policies better take into account specific, or local, knowledge—the knowledge of time, place, and circumstance?

New Environmentalism

In this changing context with its combination of new and old challenges, a new environmentalism is emerging. The states and their environmental protection agencies, working with the private sector, are at the forefront of this "discovery process." Programs and policies emerging as part of this new environmentalism have four features. These features include: (1) greater flexibility in how firms, farmers, and local communities achieve environmental goals; (2) a focus on performance rather than on process; (3) a move toward incentives rather than punishment as the strategy of choice; and, (4) a move

toward place-based decisions where the "devilish details" of local circumstance become part of the decision process.

Flexibility. By the 1990s, states were overseeing, implementing, and enforcing the majority of all environmental programs. That day-to-day, hands-on experience made state regulators acutely aware of some of the challenges, missed opportunities, and unintended consequences of prescriptive and process-focused environmental regulations. Acting upon this recognition, state regulators have launched an array of programs intended to inject greater flexibility into the way the regulated community may achieve desired environmental goals.

These experiments in flexibility do not imply "roll back"—quite the opposite. Most of these endeavors involve extending the performance envelope upward and outward to cover more environmental problems and with higher ultimate goals.

Under New Jersey's facility-wide permitting program, for example, one participating firm Huntsman Polypropylene was able to replace 80 separate permits with a single facility-wide permit. Through total facility evaluation, plant managers at one facility were able to eliminate 8.5 million pounds of emissions per year. The flexibility that the permit program engendered allowed Huntsman to modernize its plant, eliminating 107 of the plant's 350 pieces of equipment. In Massachusetts, implementation of an industry-wide permitting program for dry cleaners resulted in reductions of fugitive emissions of perchloroethylene by 43 percent; the same program resulted in a 99 percent reduction of discharges of silver from photo-processors.

Some of these endeavors have been initiated independently by the states. Others have advanced in tandem with federal programs such as Project XL and the National Environmental Performance Partnership system.

These programs include the development of "environmental performance compacts" with firms and farmers; facility-wide permitting programs that move away from source-by-source permit requirements; and industry-wide permits. Some are pilot programs; some have become more broad-based initiatives. States with both Democratic and Republican legislatures and governors are moving in this direction.

Among the trend setters in developing these programs are Wisconsin, Oregon, Illinois, Minnesota, Massachusetts, New Jersey, and Florida.

Wisconsin's Green Tier program establishes a two-tier permit option. The first, the Control Tier, applies traditional source-by-source permits. The second, the Green Tier, allows firms that demonstrate high levels of compliance an opportunity to develop a "performance compact"—in effect, a single, facility-wide permit. This permit establishes a set of performance criteria, potentially on a multi-media basis, spelled out in a "contract" or "compact" between the firm and the public. The compact is enforceable in the courts.

Under its Green Permits program, Oregon's Department of Environmental Quality (DEQ) offers two types of permits available to facilities that have achieved superior environmental performance—a Green Environmental Management System (GEMS) Permit and a "Custom Waiver Permit." The GEMS permit requires that firms use a formal environmental management system through which firms establish and maintain environmental goals. The custom waiver allows limited waivers of normal permit requirements if a waiver is needed for the facility to achieve superior environmental results (for example, through pollution prevention).

Florida is developing a Phosphate Industry permit that establishes a single permit for an entire mining operation over its life. The permit agreement sets performance standards and identifies environmental data the industry must report and make available to the public. It will allow reductions in paperwork and process burdens, results-based performance, and increased public accountability.

Massachusetts introduced an Environmental Results Program, which establishes performance goals and compliance assistance for selected industries on an industry-wide basis. Under the traditional permitting program, some 10,000 facilities in the target industries were regulated using over 16,000 permits. The Department of Environmental Protection spent significant resources issuing permits rather than focusing on achievement of environmental results. For example, the department was issuing air permits to some 4,400 facilities, of which two-thirds were small- and medium-sized companies that accounted for just 5 percent of the state's total air emissions. Under the new program, the state created industry-wide standards. Participating firms agreed to comply with the standards; the state focused on auditing and enforcement. As noted earlier, the program resulted in a 43 percent reduction in fugitive emissions from participating dry cleaners and a 99 percent reduction in silver discharges by photo-processors.

In the mid-1990s, New Jersey experimented with a facility-wide permitting program. Through the program, facilities must keep emissions below specified performance caps but may achieve those goals in whatever ways they deem most effective and efficient. For one firm, the old, source-by-source permitting process had generated ten binders of paperwork. The new system reduced paperwork to a 1.5-inch thick packet. A single permit replaced 80 separate permits and could be processed in 90 days rather than 18 months. One firm estimated that it reduced 8.5 million pounds of emissions per year because the permit allowed them to modernize their facility (without getting new permits for each individual process change).

Performance. While most state-initiated new environmental programs emphasize results (rather than process), several programs have particularly focused on developing performance indicators. Among these efforts are programs in both Florida and Oregon.

Florida, for example, has developed a three-pronged set of performance measures that move away from simple "bean-counting" of enforcement actions as the proxy for performance. The first tier of measures sets forth direct indicators for environmental and

public-health outcomes. These include indicators of air quality, surface and groundwater quality, aquatic and marine-resource protection, public health and safety, and public recreational opportunities. The second tier evaluates behavioral and cultural measures that go beyond mere compliance statistics. While the state measures regulatory compliance, it also looks at voluntary adoption of environmental technologies, pollution prevention achievements, energy consumption, per capita freshwater consumption, and so on. Tier three includes traditional enforcement statistics, but they attempt to measure internal agency efficiency and effectiveness as well—time taken to issue permits, resources spent on compliance assistance, research, and monitoring, resource management, and land acquisition. Indicators are ranked as "good," "watch," or "focus" areas, allowing state regulators to set priorities by focusing on those areas in which resources are most needed to solve problems.

Incentives. The ultimate goal of environmental policy is to foster a nation of self-motivated environmental stewards. As states grapple with how to inspire firms and farmers to move "beyond compliance", many have introduced environmental-incentive and compliance-assistance programs. Through its Texas Clean Industries 2000 program, for example, Texas has attracted over 140 firms into pollution-prevention activities. The firms commit to achieving a 50 percent reduction in toxic chemicals over a two-year period. After one year, the program was credited with fostering reductions in hazardous waste by 43,000 tons; reductions in energy consumption by 11.3 million kilowatt hours; and reductions in 317 million gallons of water consumption. Also in Texas, the state established a landowner incentive program to encourage farmers and ranchers to restore and maintain habitats to attract threatened species such as the lesser prairie chicken.

Mississippi launched a voluntary stream-protection program in which the Department of Wildlife, Fisheries, and Parks worked jointly with farmers, riparian landowners, and individual citizens to reduce water pollution, primarily through pollution-prevention efforts. Pennsylvania, through its Pollution Prevention Site Assessment grants, helps small-business owners identify pollution-prevention and energy-conservation strategies. Wyoming has an Outreach and Environmental Assistance program also designed to help participants meet environmental goals. Illinois, through its Clean Break Amnesty program, offers compliance assistance to small businesses. In exchange for their participation and completion of pollution-reduction efforts, the small businesses are exempted from various fees and fines.

Among the more notable incentive programs are those designed to clean up "brownfield" (abandoned hazardous waste) sites. A number of states, including Michigan, Pennsylvania, Illinois, New York, and many others now have voluntary remediation programs. The programs typically have several central features. First, they often tailor clean-up standards to the proposed use of the property, so standards are based on expected exposures to hazards rather than on a single, bright-line clean up standard. Second, they often provide some liability protection to developers that invest in site clean up to the prescribed levels. Liability protection does not extend to future pollution but applies to pre-existing conditions only.

The results of these endeavors have been impressive. Under its Voluntary Investigation and Cleanup program, Minnesota cleaned up nearly 500 sites over a several year period. Pennsylvania, which launched its Land Recycling Program in 1995, completed clean ups in over 100 sites in just two years. Illinois, which launched its brownfield program in 1993, had cleaned up 225 sites by 1997.

Place-based Decision-making. As experience with environmental problems builds, one observation recurs—many environmental challenges involve location-specific details. A landfill in Florida, with high water tables, faces different challenges compared to a landfill in a desert. Fast-moving streams involve problems that differ from slow-moving delta streams. Forests in low, wet latitudes require different management practices than forests in high, dry mountains. The recognition of location-specific challenges of many environmental problems has led many states to experiment with place-based decision making. Local settings also have the potential to bring together diverse people with varying interests and needs in relationship to local resources.

To some extent, voluntary remediation programs represent a move to place-based decision making, because local economic, environmental, and social interests are woven together in final clean up decisions. But one of the most fertile arenas for place-based decisions has centered on watershed management challenges. Numerous states—and localities—have attempted to tailor decisions about watershed management to local circumstances and priorities by devolving decisions to those most affected by such decisions.

In Minnesota, for example, the Department of Natural Resources, City of St. Paul, University of Minnesota, and the Ramsey-Washington Metro Watershed District joined forces to develop a watershed management program for the Phalen Chain of Lakes in the Mississippi River basin. Since the project's inception, another seven city governments and two counties have joined the effort. The project moves away from the single-problem focus of the more traditional regulatory process, addressing simultaneously water quality, fisheries, wetland protection, vegetation and wildlife management, and river corridor protection and restoration.

Minnesota and Idaho have both pioneered effluent-trading schemes that improve water quality by involving "point-source" and "nonpoint" (for example, chemical runoff from farming practices) sources. The Minnesota Pollution Control Agency (MPCA) has capped new and existing discharges into the Minnesota River. Because the cap made it difficult for firms to modernize or upgrade, the MPCA agreed to work with the Coalition for a Clean Minnesota River and one brewing company to institute an effluent-trading program. Under the program, the brewing company was permitted to discharge effluent from its new wastewater treatment plant if it helped reduce other discharge sources along the river. The company agreed to offset its emissions by investing in programs that helped farmers reduce their chemical runoff and other pollution sources.

On the Upper Clark Fork River basin in Montana, initial disputes between environmental activists and farmers over instream flows yielded to consensus for a leasing arrangement after a local, collaborative decision process was initiated. The lease agreement allowed for temporary transfer of pre-1973 water rights rather than the outright sale or relinquishment of those rights. The lease allayed fears of ranchers that they would lose prior claims to those water rights, while still allowing them to be remunerated for conserving water and leasing the "saved" water for instream flow maintenance. Increased instream flows, in turn, helped to maintain wildlife habitats.

Challenges and Opportunities

State environmental innovations toward flexibility, performance focus, incentives, and place-based decision making invite substantial new opportunities to improve environmental performance. In general, these programs allow for a more holistic approach to environmental problem solving, one that recognizes the interconnectedness of many of these problems. They also nurture private-sector innovation and private stewardship, creating a context in which firms and communities are better able to set priorities, target resources to critical problems, and craft more cost-effective approaches to reducing these problems.

But these efforts face both political and implementation challenges, including constraints imposed by the existing federal regulatory context. For example, an April 2000 survey by the Environmental Council of the States, an association of state environmental regulators, ranked problems with EPA's existing policies, procedures, and rules as the most significant barrier to their efforts at innovation.

In general, challenges cluster into three categories. First are challenges posed by fitting new regulatory structures within the old regulatory context. These include uncertainties about allocation of enforcement responsibilities between federal and state agencies. Lack of clarity in this regard has given rise to concerns about potential overfiling in enforcement cases by federal regulators.

Another central challenge tied to regulatory structures is how to ensure that permits or agreements initiated under the new programs, which often deliberately avoid issuance of traditional source-by-source permits, will supplant the source-by-source permits without: (a) triggering an enforcement action, or (b) requiring a negotiation process with federal regulators on each and every source-by-source permit that is intended to be avoided through the flexible-permitting, or multi-media permitting process. Some streamlined federal mechanism to allow the new permits to supersede the old may be warranted. Currently, through its Project XL and other programs, U.S. EPA has attempted to create conditions for this blending of the old and the new to occur. However, these processes remain unevenly implemented; procedures and qualifying conditions remain unpredictable.

States also face difficulties in meshing new data-reporting mechanisms that emerge from more holistic and performance-focused programs with the data-reporting requirements of the old regulatory model.

The second set of challenges is technical.

For example, as states move toward effluent trading, establishing equivalencies among pollutants subject to trades is not straightforward. Allocation of initial baselines or emission credits as part of tradable-credit schemes is also difficult and often contentious. At least one proposed state air-pollution trading program failed because of difficulties over these allocation questions.

Development of appropriate performance indicators by states also poses technical and conceptual challenges. Environmental problems are complex and numerous. Reducing indicators to a workable set and determining appropriate measures for different problems involves data aggregation and simplification. Regulators face a choice between what might be called "richness"—detailed, highly tailored indicators—and "reach"—indicators that are sufficiently generic so that they can be reduced to a manageable and broad set.

The third set of challenges relates to stakeholder interests and concerns.

In developing facility-wide compacts with firms or in establishing place-based watershed management programs, a key question is which "stakeholders" should be at the decision table. These issues likely should not be settled at the federal level but rather on an individual basis by states as they determine what decision-making forums work well in different circumstances.

Some stakeholders have also raised questions about "fairness" as well as about the certainty of outcomes that might emerge in programs with multimedia permits, compacts, or voluntary incentives. Air-permit trading, for example, may shift pollution to certain "hotspots," thereby unevenly benefiting different populations. These are, however, challenges that are best handled through the implementation architecture of trading programs rather than through broad federal rules.

Congress as Facilitator

What, if any changes are needed to encourage innovation and improve environmental performance? How can these changes be orchestrated? What are the respective roles of the legislature through policy modifications and the executive branch through executive orders and agency policy changes?

The new environmentalism, as embodied in state initiatives toward flexibility, incentives, and a performance focus, shows substantial promise to deliver environmental performance more holistically and efficiently.

- States conduct many delegated and non-delegated programs, including many that have introduced innovations toward more flexible, results-focused programs.
- States passed over 700 environmental laws in 1997 alone; at least half deal with non-delegated environmental programs (pollution prevention, waste management, etc.)
- 80% of states have at least one clean air standard stricter than federal minimums.

While some innovations are occurring, without changes in federal law these innovations will likely remain marginal "special" programs. Fostering these state initiatives does not require an overhaul of the major environmental statutes. It does, however, require what Debra Knopmann of the Progressive Policy Institute has referred to as "transitional legal space."

Crafting that transitional space requires a delicate balance between, on the one hand, asserting congressional commitment and authorization for flexibility and, on the other hand, resisting prescription and micro-management of the innovation process. Moreover, expression of congressional commitment to innovation may be inadequate. The new environmentalism places a premium on performance measurement, which may require additional resources allocated toward monitoring and helping states invest in developing indicators. Finally, a federal commitment to a new environmentalism will require a more systematic way of tying priorities and resource allocation to results as measured through various indicators—a challenge states like Florida, Oregon, and New Hampshire have begun to address independently.

Options

Congress has a number of options that could facilitate the move toward a new environmentalism more focused on performance, incentives, and innovation made possible through greater flexibility for states and firms.

Congress could institute changes through:

- the reauthorization of existing statutes, with provisions for greater flexibility in reaching environmental goals (it has been over decade since the last CAA debate, 13 years since the CWA received a full review, and 14 years since Superfund was overhauled). This option is unwieldy and unlikely to be politically feasible except through very modest, incremental provisions as statutes are reauthorized.

- development of an EPA authorizing statute that would clarify federal, state, and regional agency roles and specifically indicate congressional intent to foster state environmental innovations, perhaps by endorsing and clarifying the NEPPS mechanism to provide state flexibility. One mechanism could be through a tiered approach in which states would hold all permitting and enforcement authority for fully delegated programs, with federal monitoring of real-world results. If results fell short of required levels as agreed to in the delegation (or NEPPS-style) agreement, EPA action would be triggered. The nature of that action would need to be clarified. Non-delegated

programs would be implemented by U.S. EPA or its regions. Through periodic reauthorization of the EPA authorizing statute, additional changes could be made to individual statutes to remove specific barriers to integrated, flexible approaches to environmental management.

- development of an environmental indicators statute that would allocate resources to states to support the development by states of their performance indicators. Such a statute could also require development by EPA of threshold measurement criteria to be used by the states to allow some consistency and comparability among measures (particularly for water and air quality). The statute might link to the GPRA process in order to link performance indicators to resource allocation decisions and agency accountability (e.g., modeled after the U.S. Agricultural Extension Service, which has used analysis of performance measures to enhance outcomes).

Whatever congressional mechanism(s) are selected, Congress should resist prescribing a particular "flexibility and incentive" environmental management regime. As experience with Project XL, the various state alternative-permitting programs, and other environmental management innovations have demonstrated different permitting and decision models may be applicable in different circumstances. Moreover, decisions regarding which firms might participate, what benefits they receive for participation in incentive-based or flexible programs, and so on, should be left to states to allow for maximum experimentation with different environmental management models.

Conclusion

George Meyer, Secretary of the Wisconsin Department of Natural Resources, eloquently summarized the new environmental challenge to lawmakers:

> *It is time for public policy makers to unleash America's potential to solve its remaining and emerging environmental problems.... With Congressional direction, and adequate infrastructure, the states can create a learning system, with useful knowledge applied outward to each other and upward to Washington, their co-implementation partner.*

New environmentalism involves a discovery process—a search not only for new technologies but also for new institutional forms that inspire environmental stewardship and yield continuing environmental progress. There is no reason to think that, in our first attempts at constructing rules and decision processes to address environmental issues, we achieved institutional perfection. Current state innovations are pointing to new institutional forms that have potential to reduce conflict, enhance environmental performance, and more efficiently deliver environmental benefits.

[1] Much of the information in this testimony comes from a series of RPPI reports, including: Alexander Volokh, Lynn Scarlett, and Scott Bush, "Race to the Top: State Environmental Innovations," Michael Harrington and Christopher Hartwell, "Rivers Among Us: Local Watershed Preservation and Resource Management," David Riggs and Christopher Hartwell, "Enviromental Flexibility in Action," Christopher Hartwell, "Simplify, Simplify: Alternative Permitting at the StateLevel."

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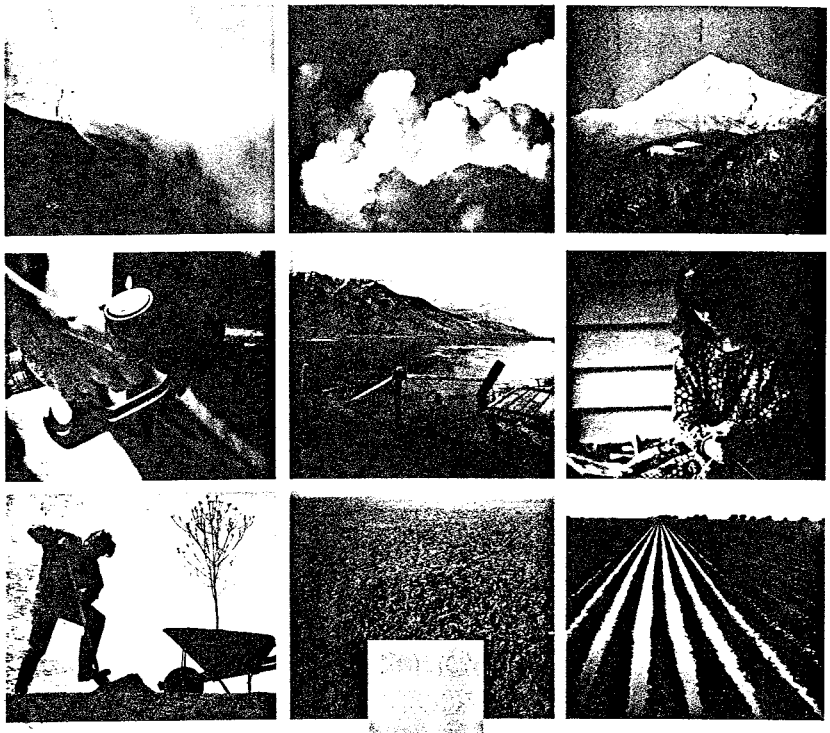
RACE TO THE TOP:

THE INNOVATIVE FACE OF STATE ENVIRONMENTAL MANAGEMENT

by Alexander Volokh, Lynn Scarlett, and Scott Bush
Project Director: Lynn Scarlett



Preface

A sea-change is taking place in environmental management in the United States today; the states are its leaders.

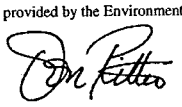
The old environmental vision, formed in the 1970s and 1980s, was crisis-driven. It distrusted markets and the private sector; punishment rather than cooperation was the method of choice for securing environmental progress. The old vision, which assumed environmental problems and conditions were similar everywhere, called for "one-size-fits-all" regulations mandating acceptable technologies and cleanup methods. Moreover, the prevailing wisdom took it almost as an article of faith that the states lacked the capacity to regulate effectively, would strike cozy deals with bad polluters, and would "race to the bottom" in their attempt to cut environmental standards to attract businesses from other states.

As the largest environmental problems have been addressed, with the remaining problems being smaller, subtler, and varying from place to place, the costs and inadequacies of inflexible, prescriptive, and confrontational policies have become more apparent. Achieving future environmental goals will require innovation, flexibility, cooperation, and decentralization.

Our new environmental vision stresses problem-solving instead of primarily relying on punishment for failure to follow one-size-fits-all approaches. It strives to balance competing values—both environmental values against other values, and some environmental values against other environmental values. It seeks flexibility in compliance methods, so that companies can choose the lowest-cost way of achieving a given level of environmental quality rather than following prescribed approaches. It views the private sector as central to environmental improvement. And it tries to bring decisionmaking authority to the lowest possible level where it makes sense—so that local problems can have local solutions, state problems can have statewide solutions, and federal problems can have federal solutions.

Many states have taken the lead in enacting environmental reforms based on these principles. This report chronicles some of their efforts.

This report builds on NEPI's report, *Building Partnerships for Accountable Devolution* (Fall 1996), and on Lynn Scarlett's report, *New Environmentalism* (January 1997). Information in the report was drawn from in-person interviews and conversations with representatives from state agencies across the country, and from material provided by the Environmental Council of the States.



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Policy Study No. 239

Race to the Top:

The Innovative Face of State Environmental Management

BY ALEXANDER VOLOKH, LYNN SCARLETT, AND SCOTT BUSH

Introduction

One day, Mary Gade realized that small businesses in Illinois, inexperienced in the ins and outs of environmental compliance and fearing hefty penalties, were reluctant to ask for the Illinois EPA's help in fixing their environmental problems.[1] Many people feel the same way, but not all of them are the director of the Illinois Environmental Protection Agency. In 1995, to address this problem, as well as to overcome the regulated community's historic mistrust of environmental regulators, Gade set up Clean Break, an innovative program which offers small businesses compliance assistance and relief from penalties, provided they come into compliance within a reasonable time.

Gade also believed that unrealistically stringent cleanup standards, and developers' fear of liability if they took the trouble to clean up a site, were unnecessarily hindering the reuse of "brownfields," or contaminated industrial sites. The Illinois EPA, in 1993, developed a set of flexible cleanup standards and limited liability releases that have contributed to the successful redevelopment and reuse of hundreds of contaminated sites.[2]

Gade, who worked for the U.S. EPA for thirteen years before heading the Illinois EPA, has a name for what state environmental agencies can do—"magic." She recognizes that at the federal level, these sorts of imaginative, spur-of-the-moment, voluntary initiatives would have been impossible. "States are particularly well positioned" for experimentation, she says. "We make great laboratories." Moreover, she says, the U.S. EPA may no longer be the best place to make many sorts of environmental decisions. "The federal government is not being as helpful and constructive as they could be," and "the environmental management system of this country, after 30 years, is essentially ready for a major rethinking and overhaul."

How is environmental management changing in the United States? The old environmental vision, shaped in the 1960s and 1970s, implicitly, and sometimes explicitly, viewed the information challenge as one of identifying general environmental problems and then specifying uniform remedies to those problems;

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[1] Personal interview, Mary Gade, director of the Illinois EPA, September 12, 1997. Subsequent quotes from Gade are from the interview unless otherwise indicated.

[2] Both the Clean Break program and the brownfield program are described later on in this paper.

information relevant to environmental problem-solving was perceived to be the sort that could be collected and centralized within an agency of experts, then translated into a series of one-size-fits-all regulations that prescribed acceptable technologies, cleanup methods, and single-purpose wilderness management plans. The public sector was the sector of choice for solving environmental problems, and punishment rather than cooperation was the method of choice for securing compliance on the part of the private sector.[3]

The new vision of environmental regulation embodies the following five attributes:

- it stresses problem-solving instead of primarily relying on punishment;
- it strives to balance competing values, both environmental values against other values, and some environmental values against other environmental values;
- it seeks flexibility in methods of compliance, so that companies can choose the lowest-cost way of following the law instead of having to follow a single prescribed way;
- it views the private sector as a key partner in environmental improvement; and,
- it tries to bring decisionmaking authority to the lowest possible level where it makes sense—so that local problems can have local solutions, state problems can have statewide solutions, and federal problems can have federal solutions.[4]

Many states have begun to implement reforms that embody these principles. Table 1 gives a brief summary of such reforms.[5]

Like all innovations, a number of barriers stand in the way of changing established practices. Some of the most obvious barriers are technical; indeed, often methods which we recognize today as obviously being better policy were not adopted earlier because they were technically difficult to implement. Lacking good direct measures of environmental variables, environmental agencies had to rely on crude proxies. One Nebraska regulator recalls the days of using "dust-ball buckets" to measure particulate matter. The agency would set out a bucket and, after 30 days, measure what was inside, amid the bugs and bird-droppings.[6] In an age of widespread, serious environmental problems, such inexactness was acceptable; everyone knew what, broadly speaking, the environmental problems were, and the "grief-to-worth-it ratio" of analytically refining environmental measures was high. Today, though, when many major environmental problems have been addressed and minor environmental problems are harder to pinpoint, developing true performance measures acquires paramount importance.

Other barriers are of the more subtle, psychological kind. No one likes change, and participants must often be prodded in the right direction. This resistance to change appears not only in state and federal environmental agencies, but also in the regulated community. "It's sort of funny," Gade muses about some of her innovative environmental programs. "It's not exactly as if people are flocking to our doors saying, 'I can't wait to try

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[3] See Lynn Scarlett, *Environmentalism for a Dynamic World,* Progress and Freedom Foundation Essay No. 5, March 1996. See also *Getting Back on the Compliance Track,* National Environmental Policy Institute, Fall 1996, which recommends various approaches which would allow the U.S. EPA to use more integrated and balanced approaches to identifying and resolving environmental problems.

[4] Lynn Scarlett, *New Environmentalism,* National Center for Policy Analysis, Policy Report No. 201, January 1997.

[5] See, generally, *Building Partnerships for Accountable Devolution,* National Environmental Policy Institute, Fall 1996, which recommends various initiatives the U.S. EPA and the states could undertake to strengthen the federal-state relationship and to allow the states greater flexibility in ensuring environmental results.

[6] This story was recounted at the Environmental Regulatory Innovations Conference, sponsored by the Environmental Council of the States, Minneapolis, Minn., November 5–7, 1997.

something innovative. Thank God we have this program!' and [our staff] is saying, 'No! No! We can't take another hundred of you.'" She recalls a senior executive from a company she regulated, who commented on a flexible compliance program, "I hate this! I want you to tell me what to do!"

TABLE 1 : Partial Summary of State Innovations

State	Problem-solving	Balancing	Flexibility	Private stewardship	Local decision-making
Alabama		X			
Alaska	X				X
Arizona	X	X			X
Arkansas	X	X		X	
California	X	X			
Colorado	X	X	X		
Connecticut	X	X			
Delaware	X	X			
Florida	X			X	X
Georgia				X	
Hawaii					
Idaho	X				X
Illinois	X	X	X	X	
Indiana	X	X	X	X	X
Iowa	X				
Kansas	X				
Kentucky	X				
Louisiana					
Maine	X	X	X	X	
Maryland	X			X	
Massachusetts	X	X		X	X
Michigan	X	X	X		
Minnesota	X	X	X		
Mississippi	X	X			
Missouri	X	X		X	
Montana	X	X		X	
Nebraska		X		X	
Nevada	X	X			
New Hampshire	X				
New Jersey	X	X		X	
New Mexico	X				
New York	X	X	X	X	
North Carolina	X	X	X		
North Dakota					
Ohio	X	X			
Oklahoma	X	X			
Oregon	X	X			X
Pennsylvania	X	X	X		
Rhode Island	X	X			
South Carolina	X	X			X
South Dakota	X				
Tennessee	X	X			
Texas	X	X	X	X	
Utah	X	X			X
Vermont		X			
Virginia	X	X			
Washington	X	X	X	X	X
West Virginia					
Wisconsin	X	X	X		X
Wyoming	X				

Note: NEPI and ECOS surveys and other sources. This list is not intended to be comprehensive.

Many of the significant barriers stem from the state-federal relationship, particularly in the enforcement arena. In a sense, it should not be too surprising that states and the federal government have different ideas, and sometimes come into conflict, over environmental regulation.[7] "I am probably going to be a kind of middle-of-the-roader or dove on [U.S.] EPA relations," says John Hamilton, Commissioner of the Indiana Department of Environmental Management,

> *because it doesn't get me too excited that we have problems every once in a while—because I think that we just always will—because there are differences in the way we look at things, differences in our responsibilities, and I think that we need to work real hard to generate shared information and to coordinate things, like on enforcement issues, which are important for us to talk a lot about. I do think that as the overall compliance issues are becoming more complicated—how do you utilize the whole range of compliance assurance, and how to have an integrated approach from technical assistance to criminal prosecutions—that relationship with the federal government becomes more complicated and more important to coordinate.*[8]

The case studies that follow illustrate both some of the successes of innovations in state environmental management and some of the barriers. Section I examines alternatives to punitive approaches, including compliance assistance and amnesty programs. Section II addresses programs that balance environmental concerns, focusing on brownfield redevelopment initiatives. Section III describes the quest for flexibility in environmental regulation and compliance, both on the individual facility level (Project XL and environmental management systems) and on the state level (determining equivalence in delegation decisions). Section IV gives an overview of initiatives that achieve environmental benefits by relying on market forces and private property. And Section V describes a few instances of decentralization and local partnerships, with some views on where the proper U.S. EPA role may lie in a world of devolution of environmental responsibilities.[9]

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[7] See, generally, *Getting Back on the Compliance Track*, pp. 16–27, 34–37.

[8] Personal interview, John Hamilton, commissioner of the Indiana DEM, September 15, 1997.

[9] A brief note on agency names. There is no particular pattern to the naming of state environmental agencies. Some state environmental agencies are called Environmental Protection Agencies (Illinois, Ohio, California—though the California agency is usually called Cal/EPA), some are called Departments of Environmental Protection (Pennsylvania); others are called Departments of Environmental Management (Indiana), Departments of Environmental Quality (Utah, Virginia), or Natural Resource Conservation Commissions (Texas, which is abbreviated TNRCC). Some states have two environmental agencies—one which takes care of standard air, water, and waste regulation, and another which takes care of natural resource management (parks, forests, species). The distinction, for example, between the Indiana DEM and the Indiana DNR (Department of Natural Resources), approximately mirrors the distinction, on the federal level, between the U.S. EPA and the Department of the Interior (which runs land management and endangered species programs). Each of these agencies will be called by its own name in this report—Illinois EPA, Pennsylvania DEP, Indiana DEM, and so on. To avoid confusion, the federal Environmental Protection Agency will always be called the U.S. EPA.

Mr. RYAN. Thank you. That is a lot for 5 minutes.

Ms. SCARLETT. I have been told I would be good on the Fed-Ex commercial.

Mr. RYAN. Yes, absolutely. That was very comprehensive. I appreciate that.

Just so everybody knows, all of the contents of your opening statements will be included in the record should you decide to summarize your remarks.

Mr. Seif.

Mr. SEIF. Thank you. Pennsylvania appreciates this chance to be here this afternoon. We especially agree with your thesis of the laboratories of democracy on behalf of Governor Tom Ridge and ECOS, the Environmental Council of the States, which a number of us are proud to be members of.

We are very happy that the Beltway has taken notice of what some of us guys are doing out there.

My written testimony, as you have intimated, is far too long and I am not even going to try to summarize it. It does showcase three of the innovations that are particular sources of pride to us in Pennsylvania.

As to each, I would like to make a couple of points. First, the Land Recycling Program. Land recycling occurred, unlike most Federal statutes, without any delegation at all. Superfund is one of those statutes that doesn't provide for the standard Federal package of deferring to the States after certain hoops have been jumped through.

That may account for its innovativeness. It was not subject to a long, EPA recipe of, "here is what you have to do, here is the kind of statutes, here are the regs, here are how many FTEs you have to devote to it," and so on.

I don't necessarily recommend that delegation be altered; I think it is a great idea, a very important innovation in American jurisprudence, but it sure needs to be loosened up, especially at this time when 71 percent, by EPA's measure, of programs have been delegated.

We need some of what Lynn Scarlett has mentioned, that maneuvering room in between the statutes where we can do more innovation, but still with Federal guidance, which I think, is overall very important.

Congressman Sanders has pointed out, someone has to be in charge and someone has to watch over all the 50 States. The question about delegation is, should there be some protection of the brownfields programs?

I do commend to the committee's attention work being done by other committees and in the Senate on the subject of protecting the brownfields programs from perhaps some action by this Federal Government, by the Superfund, that would do harm to them.

At different times different statutes need different levels of delegation. The Clean Water Act needed a lot at the beginning and needs less now. The Clean Air Act may need more now simply because of the nature of pollution.

There is not a single sort of role for where delegation should be. EPA needs to have that kind of maneuvering room.

Growing Greener is a $645 million expenditure in Pennsylvania for what we have dubbed "green infrastructure." Infrastructure is usually thought of, in the green area, the environmental area, as bricks and mortar and pipes and pumps and so on.

In Pennsylvania we have discovered that most people still think that we can argue about parts per million of this or that pollutant as the environment, as the trees and streams and the clean air.

Green infrastructure is simply tending to that broad aspect of the environment beyond pipes and pumps. It is undeveloped flood plain. It is a farm that is still a farm or other kind of open space. It is a stream that has the right kind of buffer.

It is a network of land strung together to encourage and enhance biodiversity. It is a watershed that has a community organized behind it or a broad arrangement such as has been pioneered in the Everglades recently.

It is a watershed that has a real TMDL, a sensible common sense community measurement of what are we trying to do here and how can we, point source and nonpoint source, get it done.

Green infrastructure is also an environmental leadership style—the kind of people who will reach for hip boots and a shovel instead of a microphone when they see a problem and won't run off to the State capital or the national capital to complain and demand new Federal laws.

The 21st century economy requires green infrastructure of the sort that I am talking about. No community can live long on smokestacks or dot-coms. You need to have a quality of life, and that is green infrastructure.

In Pennsylvania we are glad we were able to fund this amount of green infrastructure without going into any debt. It is considered an investment and not something that our grandchildren need to pay for.

Finally, I would like to talk about measuring the right things. If I ever get a chance to brag to my grandchildren about what I did when I was on the public payroll, it will be the attempt not to build green infrastructure and revitalize this or that acreage and industrial land, but rather to change the way we count things, to change the very nature of the public debate about the environment.

When I started out in the 1970's, any target you shot at you could hit, and say you got a polluter and throw somebody in jail.

In the environmental area we have tarried too long in counting enforcement as a surrogate for public administration progress against a known enemy which is pollution.

It is not how tough we are but how effective we are. That means we can use and should use other tools, not instead of but in addition to the traditional shoot 'em up cops and robbers stuff that makes for good press.

The fact is that I would be happy to make available to the committee the program that we have undertaken in Pennsylvania to measure who is in compliance and who is not. It is not "Did we zing them last night?" But did they do what they were supposed to under the laws of the land, both State and Federal.

We can tell you that now. The fact is that when we can tell you that, it changes the public debate about what should the department be doing.

We are tired of being just a police force. We want to be a police force and an ag extension agent as well as to the broader problems of pollution.

I would like to conclude with some observations and state an agreement with Congressman Sanders. Vermont is a little bit like western Pennsylvania, the victim of pollutants elsewhere.

We could stop every car in Pittsburgh and still be in trouble when we wake up in the morning at that end of our State. The fact is air pollution is different from water pollution and it is different from pollution underneath the land as a result of hazardous waste and so on.

We do need a strong Federal Government. We do need careful, thoughtful administration of the Federal system, not bureaucrat bashing, which I am always guilty of myself, including EPA bureaucrats.

But give them some maneuvering room in the State and at EPA to do sensible things and they can be different at different times and with different pollutants.

Thank you.

[The prepared statement of Mr. Seif follows:]

TESTIMONY OF JAMES M. SEIF
SECRETARY OF THE
DEPARTEMNT OF ENVIRONMENTAL PROTECTION
BEFORE THE
SUBCOMMITTEE ON NATIONAL ECONOMIC GROWTH,
NATURAL RESOURCES, AND REGULATORY AFFAIRS
OF THE
COMMITTEE ON GOVERNMENT REFORM
SEPTEMBER 13, 2000

Mr. Chairman and members of the committee, I am James Seif, Secretary of Pennsylvania's Department of Environmental Protection. Pennsylvania enjoys being a "Laboratory of Democracy," especially in the area of environmental innovation, and we are pleased to be here today to share a few of the lessons we are learning in Pennsylvania.

The three areas I would like to highlight today are:

- the Land Recycling Program for the cleanup of brownfield sites;
- our Growing Greener Program for the restoration and protection of watersheds and "green infrastructure;" and,
- eFACTS, our innovative system for public access to environmental data.

LAND RECYCLING PROGRAM

Pennsylvania, like many other states, has a rich industrial heritage that benefited the nation -- but left us with many contaminated industrial sites. Some were even abandoned, and all of them represented an under-utilized economic asset and a potential environmental threat.

Complicated federal remedies of the late 1970's and 80's such as RCRA and Superfund addressed the legacy of these sites by using "command-and-control" techniques. The unworkable liability scheme of Superfund produced endless litigation instead of environmental cleanups. Requirements that contaminated sites be returned to pristine condition – a standard that was financially and sometimes technologically prohibitive – left once-productive sites permanently off-limits to development and reuse, especially in communities most in need of redevelopment, and helped push new development to "greenfields".

Governor Tom Ridge and the leaders of the Pennsylvania General Assembly envisioned a different approach. Acts 2, 3 and 4, establishing Pennsylvania's Land Recycling Program, were signed into law on May 19, 1995. They let communities tear down the fences around these sites, to begin to restore the land, to use existing infrastructure, to bring back jobs, and to turn our manufacturing heritage back into an asset.

The Land Recycling Program is an innovative solution that evolved from concept to reality so successfully that Governor Ridge has described the program as "simply a case of government making sense."

This common sense approach provides four essential tools: uniform cleanup standards, standardized review procedures, release from liability, and financial assistance. These features destroyed the barriers that stood in the way of the federal and early state remediation programs.

- Uniform standards, under four cleanup options, give land recyclers the flexibility they need to attack this nationwide problem. Total costs and project time are also easier to establish.
- Standardized review procedures provide a uniform statewide process for cleanups. A technical guidance manual was published, in plain language, to help companies and consultants use the program. The program imposed review time limits and guarantees a reply to applications within 60 days.
- Releases from liability take the risk out of undertaking a remediation project. Anyone who cleans up a site to the new standards is released from any additional cleanup of the old contamination. This release travels with the property and can extend to financial institutions, economic development agencies, and local authorities. It essentially puts the site back into the stream of commerce.
- While the program has attracted millions of dollars of private sector investment in cleanup, funding assistance is also available to help reach sites that might not otherwise get addressed. The Industrial Sites Cleanup Fund, initially stocked with $15 million, makes grants and low-interest loans available to cover up to 75 percent of the cost of site assessment and remediation. Pennsylvania's Department of Community and Economic Development has already provided in excess of 20 million dollars in grants and loans to assist land recyclers.

Don't think that the Land Recycling Program uses lax environmental standards. On the contrary, the program used sound science to establish cleanup standards that protect public health and the environment. The difference is that these standards are realistic enough to actually be achieved.

The results speak for themselves. Since the inception of our Land Recycling Program, more than 777 sites have been remediated and hundreds more are in various stages of cleanup – compared to Superfund, in which only 16 of 112 sites on Pennsylvania's NPL have been delisted. Many of these brownfields properties are now back on the tax roles, and more than 20,000 people now have jobs on these redevelopment sites.

As David Gergen from U.S. News and World Report has pointed out, "These results are impressive. Pennsylvania has created strong incentives for businesses to clean up and revitalize abandoned urban sites, while preserving farms and undeveloped land in

the process." We are proud to have won the 1997 Innovations in American Government Award from the Ford Foundation and the Innovations Award from the Council of State Governments.

Our program is not only producing environmental protection and economic development gains at individual sites, but also is accomplishing broader policy goals such as reversing urban blight and developing a sustainable future. It makes our Department a pertner with redevelopment authorities, local government, lending institutions and the private sector, to create jobs, increase tax revenues, improve transportation infrastructure, revitalize urban areas, and preserve open space. This partnership is certainly a more satisfying role than going to court!

As often happens, one successful innovation leads to others. Multi-site agreements (MSAs) help companies or organizations with multiple contaminated sites to manage both cleanup and fiscal needs through a voluntary partnership with DEP. By scheduling the cleanups over a period of time, MSAs help companies direct resources to solve the most significant environmental problems while accommodating their revenue and resource allocation process. Two particular companies, Penn Fuels Gas and Pennsylvania Power & Light successfully pioneered the MSA process.

We have also entered into a multi-site agreement with the U.S. Army, Air Force, Navy and Defense Logistics Agency to facilitate the cleanup of all sites used previously for military purposes and to prepare them for reuse a decade earlier than originally scheduled. This was a landmark agreement that will have tremendous economic development benefits for the Commonwealth and has formalized a plan of action for resolving federal liabilities at 1,260 sites in 26 of our 67 counties. This agreement was only possible because of the flexibility afforded by the state laws establishing the Land Recycling Program and clearly can be a model for other States to follow. We are pleased that New Jersey signed a similar agreement just two weeks ago.

To raise awareness of the availability of sites for redevelopment, DEP created the Brownfields Inventory Grant (BIG) Program, which provides grants to local governments, economic development agencies and other qualifying agencies to inventory the brownfields properties in their area. Sites that are identified are added to the Pennsylvania Brownfields Directory on our Department's website, so that parties interested in developing sites will know that they are available. This database is actually a sales tool, and currently lists over 130 sites.

Another recent spin-off innovation is known as Financial Resources for the Environment. DEP has uncovered strong interest in providing additional capital to spur further advances. A consortium of 40 banks, utilities and corporations are forming a financial intermediary to increase lending and venture capital opportunities for brownfield redevelopment and other worthy environmental projects

About 40 states now have voluntary cleanup programs of their own, each tailored to the particular needs of that state. Brownfield redevelopment is becoming a common and natural aspect of real estate development in our Commonwealth and across the

nation. There is one particular legislative step that Congress can take so the nation can get the full benefit from these state voluntary programs: a release of federal liability, often called a "state finality" provision.

"Finality" will heighten developer confidence that EPA will not take judicial or administrative action should it decide to second-guess a state's decision regarding a clean-up. Those who are considering stepping forward to cleanup and restore an area, will be far more certain of the costs and time that will be incurred if they can employ the clear requirements and regular procedures afforded by state programs, rather than contemplating the open-ended liability, endless process, and bureaucratic remedy selection typical of Superfund. Finality is a key step in making brownfields redevelopment a success across the nation.

GROWING GREENER

Growing Greener is the largest single investment of state funds in Pennsylvania's history, and addresses Pennsylvania's critical environmental concerns of the 21st century. Based on recommendations made by the Governor's 21st Century Environment Commission, Growing Greener directs nearly $650 million over the next five years through the new Environmental Stewardship Fund to what we call "Green Infrastructure."

Green infrastructure isn't just bricks and mortar, pipes and valves. It's open space, undeveloped flood plains, buffered streams, parks, wetlands – and it's people organized locally to keep these resources strong.

Signed into law by Governor Ridge on December 15, 1999, the Environmental Stewardship and Watershed Protection Act is funding farmland preservation projects; protecting open space; eliminating the maintenance backlog in state parks; cleaning up abandoned mines and restoring watersheds; providing funds for recreational trails and local parks; helping communities address land use; and providing new and upgraded water and sewer systems.

Our Department of Agriculture administers the farmland preservation projects, while state park renovations and improvements are overseen by the Department of Conservation and Natural Resources. The water and sewer system upgrades are administered through the Pennsylvania Infrastructure Investment Authority (PennVEST).

The Department of Environmental Protection is authorized to grant nearly $240 million for watershed restoration and protection, abandoned mine reclamation, and abandoned oil and gas well plugging projects, and education projects.

What makes this environmental protection effort so important is the emphasis on enabling communities to address the needs that they identify in their own watersheds. The program gives local people responsibility for protecting and improving their watersheds. It directs state funding to the people who reach for a shovel -- not a

microphone -- when they see an environmental problem. We are funding stewardship, and we are proud to be doing so from current funds, not bonds to be paid by our children.

Eligible grantees include counties, local governments, authorities, conservation districts, watershed associations and other nonprofit groups involved in watershed restoration and protection. In addition to watershed assessments and implementation of watershed restoration plans, funds can be used for the organization of a watershed group and for demonstration, education and outreach projects. We aim to get as many Pennsylvanians as possible involved in restoring our environment.

The response across the Commonwealth has been overwhelming. Over 900 applications were received and $29 million was awarded to 242 grantees in our first round of grants. We recently accepted another 834 applications for review in the current round of grants and we expect to fund $27 million worth of these.

Ed Wytovich is a teacher at Williams Valley High School in Schuylkill County. Ed helped start a number of watershed associations to get citizens more involved in protecting the streams in their communities. In our first round of Growing Greener Grants, Ed was awarded $165,000 for his watershed association to construct systems to treat acid mine drainage – one of Pennsylvania's worst water quality problems – in their local streams.

Sustainable Action Incorporated was awarded $24,515 for a project spearheaded by board member Susan Curry, to reduce runoff of lawn chemicals to Wissahickon Creek in the Philadelphia area. They will collect data on this problem and conduct an extensive public outreach and education campaign.

These projects, and many more like them, are great ideas, tailored to correct specific problems identified by local communities. Helping people fulfill the dreams they have to improve their local environment is more effective -- and a lot more fun -- than telling people what to do anyday.

MEASURING THE RIGHT THINGS

In the Seventies, when both EPA and our agency were born, if you inspected somebody, you found something. If you went to court against a polluter, you won. Unfortunately, long after these activities have lost much of their effectiveness in environmental terms, they continue to be the standard measure of success.

In Pennsylvania, however, we hope people will want to measure our overall effectiveness, not just our toughness. True, old fashioned enforcement is still part of being effective – it's worth doing, but not the only thing worth measuring. A modern beat cop is still armed – but is also trained to use other tools, and is best measured by low crime rates on his beat, not high arrest numbers.

In 1997, DEP became the first environmental protection agency in the United States to begin collecting and tracking inspection, violation and compliance information in a department-wide, facility-based database. In 1998, DEP became the first environmental protection agency in the world to make this kind of compliance information available to the public on the World Wide Web. And in 1999, DEP became the first environmental protection agency to win a national innovations award for its efforts to track compliance information and make it available to the public.

For the first time, citizens could easily obtain information on the environmental performance of all regulated facilities in their communities, and could review the actions that DEP had taken to resolve any violations. The managers in our department could now easily patrol for patterns of non-compliance and target our resources to correct them. Surprisingly, some of the best "customers" of our system are senior managers in private industry who can now, for the first time, easily keep track of environmental performance at their facilities across the state, and more quickly direct improvement. We also know that facilities' neighbors, employees, customers, suppliers, competitors and shareholders use this information.

Shortly after implementing the compliance reporting system in 1997, DEP held a series of seven public roundtables that attracted more than 500 citizens. Through these public discussions, DEP received comments on improving its reporting system. We implemented many of the suggestions when we finished work on the permanent compliance reporting system that replaced the early prototype.

The new system – eFACTS (environment, facility, application, compliance tracking system), developed jointly with the Compaq Company – goes far beyond the early prototype. eFACTS, which we introduced to the public in December of last year, displays facility permit history, the status of current permit applications and additional compliance information and begins to link this information to the data in DEP's Geographic Information System.

Our system records all violations noted by our environmental specialists, not just "significant" violations. With this tool, we can calculate compliance rates based on the full spectrum of violations, for individual environmental programs, for specific industries, and for the department as a whole. In 1999, DEP conducted 72,590 inspections at more than 24,000 sites, and the compliance rate across all environmental programs was 94.02%.

This method of providing complete and accurate data to the public is more than just a handy tool. It makes the old arguments about "bean counting," over which all of us have wasted too much time, obsolete in Pennsylvania. It allows us to manage our programs better and to measure real results. It presents the full picture of compliance, including the inspections that showed good environmental performance, rather than just the occasional press release when some company is fined. And perhaps most importantly, the easy public access to this information, in and of itself, promotes

compliance, as regulated facilities would rather have a clean inspection report made public, than cleanup after a compliance problem.

CONCLUSION

I would like to mention that the Environmental Council of the States (ECOS), the national association of state environmental commissioners, has done excellent work in both promoting the use of state environmental program innovations and in providing a forum for states to share the lessons they have learned. The states represented on this panel today have been active in making that organization a great success for the states and for the environment. ECOS can be a resource to this Committee in providing comprehensive information on state innovations as you examine these issues further.

It is tempting in this kind of forum for a state official to claim that all wisdom and innovativeness resides "outside the beltway" and that all would be well if only the EPA bureaucracy behaved itself and let us do what we want. I have myself been guilty of that kind of rhetoric, and over the years have seen some members of Congress, from both parties, make sport of the "Washington bureaucrats."

The fact is, EPA has important roles to play in the federal system in general, and under the laws now on the books. And in fact, EPA has had important supporting roles in the innovations I've just discussed – even if their performance has been at times uneven, or less than we'd like. The state-federal relationship was complicated in 1789 and won't improve by any individual action, nor by finger pointing. As Tom Ridge says, the environment is a team sport – with only one team! It's not a contest between teams, but more like a Pennsylvania Dutch barn raising.

These examples that I have highlighted, as well as others that the Committee is hearing about today, are just a few of the lessons from the "laboratories of democracy." Some common elements appear in most of these innovations. They focus on results over process, they focus on finding solutions rather than finding problems, and they empower people from all segments of our society to contribute to solutions that make the most sense in their communities. Thank you.

Mr. RYAN. Thank you, Mr. Seif.

We will next turn to Langdon Marsh, the director of the Oregon Department of Environmental Quality.

Mr. Marsh.

Mr. MARSH. Chairman Ryan, Congressman Sanders, my name is Langdon Marsh. I am the director of the Oregon Department of Environmental Quality. I am very glad to be here to talk about some of our environmental policy innovations in Oregon.

We have a long history of innovative environmental programs in our State, some of the first air pollution control laws in the 1950's, the first bottle law, local land use planning laws and a number of other programs designed to protect the environment and quality of life consistent with economic growth.

Over the past 5 years we have made a number of strides in improving how environmental programs are carried out, streamlined the permitting process, worked with neighborhoods on cleaning up pollution and gotten many regulated facilities into programs that produce effective results.

I would like to talk about one of those programs which we believe is a real first and is being duplicated in other States and within EPA. It is called green permits. This program encourages companies to go beyond compliance with environmental standards and actively improve their environmental performance.

It has a tiered approach offering different kinds of green permits in which increasing levels of performance receive increasing benefits.

This legislation authorizes our agency to modify regulatory requirements for facilities that qualify, making it possible for us to do things like consolidated reporting, modified monitoring and alternative controls that allow for flexibility.

The payoff is that facilities must qualify by demonstrating that they exceed the minimum requirements for compliance, that they implement environmental management systems that truly incorporate environmental concerns into day-to-day business decisionmaking and that they also communicate widely and openly with the public about their environmental performance.

We have currently five companies that have applied for green permits. We are working with each of them. Each has demonstrated a commitment to the environment and a willingness to discuss its performance with the community.

Each has made significant gains in environmental improvements like reducing chemical use and wastes, eliminating wastes sent to a landfill and reducing air emissions to less than 10 percent of the levels allowed in the permit.

They are also working on new projects that don't necessarily relate just to the things that we as an environmental agency regulate, like a reduction of water use which benefits the larger community.

The regulatory efficiencies that these companies will benefit from include consolidated reporting, flexibility in their permits and enforcement discretion to recognize that a company that has made the commitment, stepped up to the plate, is making improvements and is accounting for it publicly does not need the same kind of scrutiny as other companies.

We have also worked closely with EPA in developing its own national performance track program, which is a very similar program that was announced earlier this summer. It recognizes the leadership of many in the private sector.

The ideas that are incorporated in that program have been tested in Oregon. I think it offers some benefits for those States that have a program like ours so that facilities can participate in both and get benefits from both.

I would like to mention a couple of other things that we are doing with innovation in dealing with the business community. Small businesses, we recognize, are a source of a significant amount of pollution that has not been traditionally regulated under the Clean Air and Clean Water Acts and the hazardous waste laws.

So, we have developed as one way of dealing with this a partnership program with the automotive services industry in the Portland area to certify auto shops that exceed regulatory goals. We give them assistance and help publicize their certification as green businesses, which are designed to help them in the marketplace.

We have also participated in the Natural Step Network. Natural Step is an international organization and movement to promote sustainable business practices among companies that sign up for it.

We are very pleased to be participating with companies like Nike on the one hand and a small house parts company on the other, working in partnership with them to lower their environmental footprint and to share their success stories with other businesses in the State.

Our Governor Kitzhaber has recently issued an executive order on sustainability, the first of perhaps several that will put the State on the path toward encouraging sustainable actions by businesses, industry and the public. We have been working very closely with the Governor on that.

So, in conclusion, we are working in partnership with many proactive, progressive companies to protect the environment, trying to solve problems, not just run programs. But as others have said, we can't disregard the more traditional environmental programs. Permits, inspections, and enforcement actions have to be continued to ensure that we continue to protect the environment.

Thank you very much.

[The prepared statement of Mr. Marsh follows:]

Testimony of Langdon Marsh
Director of the Oregon Department of Environmental Quality
before the
House Committee on Government Reform
Subcommittee on National Economic Growth,
Natural Resources and Regulatory Affairs
Regarding
"Lessons from the Laboratories of Democracy:
Environmental Innovation in the States"
September 13, 2000

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Good Afternoon, Chairman McIntosh, and members of the subcommittee. My name is Langdon Marsh, Director of the Oregon Department of Environmental Quality. Thank you very much for inviting me here today to discuss DEQ's environmental policy innovations.

Oregon has a long history of leadership in adopting innovative environmental programs. From the first air pollution control laws enacted in the U.S. in the mid-1950's, to the bottle bill and local land use planning laws enacted in the mid-1970's, to the many new programs I will discuss today, our state has often taken the initiative to design programs that protect the environment and quality of life, while preserving economic growth.

Over the last five years, we have made great strides in improving how environmental programs are carried out. We have streamlined the permitting process, worked with neighborhoods to clean up pollution, and worked with many regulated facilities in voluntary programs that produce effective results. Let me begin by discussing one program that was developed in Oregon and is now being duplicated in many other states and within EPA: Green Permits.

Oregon's Green Permits program encourages companies to go beyond compliance with environmental standards and actively improve their environmental performance. A "tiered" approach offers different types of green permits, in which increasing performance receives increasing benefits. The legislation authorizes DEQ to modify regulatory requirements for facilities that qualify, making it possible for us to allow things like consolidated reporting, modified monitoring and alternative controls that streamline the facility's environmental obligations. Facilities must qualify for these benefits by demonstrating that they exceed requirements, by implementing environmental management systems that incorporate environmental concerns into business decisionmaking, and by communicating with the public about their environmental performance.

We are currently working with five companies that have applied for a Green Permit: LSI Logic, Louisiana Pacific, PacifiCorp, Wacker Siltronics, and Epson Portland. Each company has demonstrated its commitment to the environment and willingness to discuss its performance with the community. Each has made significant gains in environmental improvements: one is aggressively reducing chemical use and wastes generated; another no longer sends any waste to the landfill, while a third has reduced and maintained air emissions to less than 10% of the levels allowed in their permit. These companies are also working on new projects, such as one that will save 800,000 gallons of water used each day at this facility–an 80% reduction in water use. These companies will all have Green Permits that offer greater regulatory efficiencies through consolidated reporting, flexible permits and enforcement discretion which focuses on the environmental management system to continually improve performance.

We have worked closely with EPA as they developed their National Performance Track program, a federal program that also rewards the top performing facilities. Both Green Permits and the National Performance Track recognize the leadership of many in the private sector, and provide an opportunity to encourage even better performance. EPA was able to launch its program fairly quickly because we had tested these ideas in Oregon. And, because of its similarity to our program, this coordination will help our facilities easily participate in both programs. In fact, the first national applicant has also applied for a Green Permit, and they told us it was because they could get double the benefit for about the same amount of work, and because they did find value in these programs.

On the small business front, DEQ and seven local agencies in the Portland area recently launched a partnership program with the automotive services industry to certify and recognize auto shops that exceed regulatory compliance standards. Called the EcoLogical Business Program, this effort is designed to provide assistance to shops in meeting the higher standards, and then help publicize their certification as a "Green Business." Twenty-two shops have been certified to date.

In addition to these initiatives that encourage facilities to go "beyond compliance," I also wanted to tell you about some of the other innovative efforts that we have underway to improve our environment.

An independent science panel, with help from DEQ and other natural resource agencies, has just released the first scientifically-founded, comprehensive assessment of Oregon's "State of the Environment." The report goes beyond the traditional environmental concerns that agencies regulate, and assesses ecosystems and the complex and interrelated systems that impact the health of the major environmental resources across the state. For example, for the first time scientists analyzed our forest ecosystems by the age of the stand, and this approach will allow us to better apply sustainable forest management principles. The report was done in collaboration with scientists and a broad based advisory group, and is intended to work in conjunction with the Oregon Progress Board's analysis of the quality of communities and economic vitality in this state.

We are developing and beginning to implement water quality plans (total maximum daily load allocation and water quality improvement plans) for recovery of polluted and impaired streams and rivers as part of the Oregon Plan for Salmon and Watersheds. These plans take a basin-wide approach to address water quality issues from all sources in the region, and are developed in collaboration with local stakeholders. Various innovations such as new technical models for establishing and allocating loads, and a unique program to develop water quality improvement plans for farmers and ranchers have been incorporated.

Oregon has worked with stakeholders in a consensus process to develop a state air toxics program that will use good science to identify communities where people may be exposed to elevated levels of toxic air pollutants. Once communities of concern have been identified, we will work with them to better

define the air toxics problems and assist a local committee to design its own plan to reduce emissions and health risks. A key focus of this community-based air toxics program is collaboration with scientific experts, state and local health agencies and local business and community representatives. The state air toxics program will provide people with the information they want about the air they breathe and the tools to decide how to protect their neighborhood's air.

We were invited to join the steering committee of the Oregon Natural Step Network, a coalition of private and public organizations committed to applying principles of sustainability in their everyday operations. The Network sponsors monthly workshops that attract over 100 attendees, and many member companies report improvements to their environmental performance while enhancing their overall efficiency, profitability and competitiveness. From large corporations like Nike to small companies like Rejuvenation House Parts, DEQ is working in partnership with them to lessen their environmental footprint and share their stories with other businesses throughout the state.

We are also working closely with the Governor's office to implement his recent executive order for sustainability. The initial phase of the executive order focuses on state agencies' administrative functions such as printing, purchasing and facilities management. Taking the lead from businesses, NGO's and other public entities, our agency has launched an "InnerGreen" effort to improve our internal environmental performance in six areas: water toxics, air toxics, forest habitat, office resource efficiency, gasoline savings and climate change. Later phases of the Governor's initiative may focus on supporting sustainable actions by businesses, industries and the public.

We have also made many improvements to our information systems. We have developed a "one-stop" facility profiler that provides the public with easy access to information about regulated facilities in each neighborhood in our state. We are also working with EPA to develop more web-based tools to improve the accessibility of our data. And, we are developing internal performance measures to better evaluate our progress in protecting the environment.

Through these and many other programs, we are working in partnership with many proactive, progressive companies to protect and enhance Oregon's environment. But this did not happen overnight. It took a lot of consensus building, collaboration, and teamwork to focus on, in Governor Kitzhaber's words, "solving problems, not just running programs."

But these efforts don't mean that we can disregard our more traditional environmental programs. There are still many facilities that need permits, inspections and enforcement actions to make sure they are doing their share to protect the environment. And we are increasing our efforts to address the many small, diffuse sources of pollution that have a large cumulative effect on our environment.

We have taken many approaches to improving the environment in Oregon, and we are continually seeking new ways to reward leaders and improve the performance of those who are on the lower end of the scale. We have done this in close partnership with our communities, large and small businesses, other agencies, and EPA as we work together towards achieving a cleaner environment.

Mr. RYAN. Thank you, Mr. Marsh.

Next we have Karen Studders, the commissioner of the Minnesota Pollution Control Agency.

Ms. STUDDERS. Mr. Chairman and members of the subcommittee, I want to thank you for the opportunity to be here before you today to share what we are doing in the State of Minnesota.

The three areas that I would like to discuss with you today will focus on "the second wave of environmental protection" in the United States; the reorganization of our State agency to meet new environmental challenges; and water pollutant trading in the Minnesota River Basin.

I have spent my entire professional career working in the environmental arena. I began as a bench chemist with the Environmental Protection Agency and then I spent 17 years directing the environmental regulatory programs for a large energy provider.

Over the last 18 months I have been serving under Governor Ventura as Commissioner of the Minnesota Pollution Control Agency.

I would tell you that I am very excited that you asked for this hearing today on this subject. I think it is a very important matter that needs attention and we need to work together on this.

What I would like to do is talk a little bit about this "second wave of environmental protection" in the United States. The first wave of protection began in the early 1970's and it focused on regulating large, industrial polluters.

It was very successful in using command and control to address what we call point source pollution, out of the stack and also out of the pipe.

However, to solve the environmental problems we have today, we need to transition to the "second wave of environmental protection." We need new tools in this second wave to address nonpoint sources of pollution.

For example, in Minnesota it is estimated that more than 50 percent of our air pollution comes from mobile sources, that is cars, trucks, and airplanes. And 90 percent of our lakes, rivers and streams are affected by nonpoint sources of pollution such as urban runoff, agricultural activities, and failing septic systems.

If we are to be truly innovative and effective, States need flexibility. That is only available through Federal authorization.

Let me tell you that in 1996 Minnesota passed legislation to authorize environmental regulatory innovation experiments. We did this so that Minnesota could take advantage of Federal innovation programs such as project XL and the common sense initiative. However, the Federal programs did not deliver the promised flexibility we needed. As a result, Minnesota has been unable to use its State innovations statute.

To address the new environmental challenges, this agency underwent a major reorganization about 2 years ago. We are no longer structured based on air, water and land, what we once called "silos."

We redesigned the agency's service delivery system to match three distinctly different geographic areas of our State.

This overhead that we are putting up shows the North district where we have most of our recreational lakes, including Lake Superior, as well as mining activities.

The South district, which is mostly agricultural crop land, and the Metro district where one half of the population of the State resides in the Twin Cities.

We also decentralized operations because different environmental priorities exist in different parts of our State. We now have six offices in greater Minnesota with 110 employees delivering services in each of their respective regions.

We also created two additional divisions within our agency. One is devoted to policy and planning and the other environmental outcomes.

It is the job of the environmental outcomes division to monitor the environment, to analyze the environmental data we get and to evaluate the effectiveness of our programs.

For years we have tracked progress by the number of permits we have issued, the enforcement actions we have taken and the inspections we have made.

That is what EPA requires us to do. We have made the assumption that these activities result in positive environmental outcomes. But we need a better handle today on the very diffuse activities that are degrading our environment, the nonpoint sources.

The reorganization we went through is about performance and measurable results. In order to achieve those results, we have tied individual work plans to our agency's 5-year strategic plan, which is actually linked to our 2-year contract with the Environmental Protection Agency, our Environmental Performance Partnership Agreement that we have with EPA.

I would like to share another environmental innovation from the State of Minnesota. Because the Minnesota River is so seriously polluted, the Minnesota Pollution Control Agency actually strictly limits any new wastewater discharges that can occur in that river basin.

If you look at the overhead that is up there, there is a picture of both the Minnesota and Mississippi Rivers as they come together. You can see the distinct discoloration of the Minnesota River, which is shown on the upper top half of the screen.

In 1988, EPA and our agency established a total maximum daily load for that river because it was so polluted. This cap placed tight restrictions on all existing wastewater treatment plants that discharge into that river. It left little room for expanded discharges.

So, how do we allow industrial expansion in this part of our State while at the same time protecting our water quality?

Since 1997, we have used a technique called "pollution trading." In this case we are talking about water pollution, specifically phosphorus and nitrogen.

Our first experience in pollutant trading was a partnership with Rahr Malting. As the name implies, Rahr is a malting company and the product is used in brewing. The pollutant trading that they went through entailed not just point source, but also nonpoint source pollution.

Let me tell you how it works. Rahr trades its increased point source discharges of pollutants for a decrease in nonpoint source

pollution coming from agricultural land that we don't currently regulate under our regulations.

To achieve this, Rahr established a trust fund of a quarter of a million dollars, supervised by an independent board of directors. Farmers and other landowners, including municipalities, apply to the fund for projects aimed at reducing nonpoint pollution in the river basin.

Rahr's offset provisions prevent 14,700 pounds of nitrogen and 7,370 pounds of phosphorus from going into that river annually.

In conclusion, I would like to tell you that to be effective in this "second wave of environmental protection" we need to do more than just build partnerships with industry.

We also need to work with individuals on behavior change. We must create environmental literacy within our citizens and we must start instilling a sense of environmental awareness in our young people.

I am optimistic that the citizens will respond to our invitation to become environmental stewards.

The State recently published the Minnesota Environment 2000 Report, which I have provided to you. It is a snapshot of the environmental past, present and future over the last 30 years.

I would like to tell you that there is a growing understanding by the States of the need to move into this "second wave of environmental protection."

In this second wave, both point and nonpoint source pollution programs are addressed using a myriad of tools, education, assistance, voluntary and incentive-based programs as well as command and control regulatory programs.

EPA has an important role to play at the Federal level and an important role in supporting our State innovations during this second wave.

To make such innovations possible, however, Congress must provide authorization necessary in order for regulatory innovation experiments to occur.

Thank you very much. I look forward to answering questions later.

[NOTE.—The publication entitled, "Minnesota Environment 2000," may be found in subcommittee files.]

[The prepared statement of Ms. Studders follows:]

TESTIMONY OF KAREN A. STUDDERS

COMMISSIONER

MINNESOTA POLLUTION CONTROL AGENCY

To the

U.S. House Committee on Government Reform

Subcommittee on National Economic Growth, Natural Resources and Regulatory Affairs

September 13, 2000

Regarding

"Lessons from the Laboratories of Democracy:

Environmental Innovation in the States"

Mr. Chairman and members of the subcommittee, thank you for the opportunity to appear before you today.

My name is Karen A. Studders, and I am the Commissioner of the Minnesota Pollution Control Agency. Governor Jesse Ventura appointed me to this position 18 months ago.

The three areas that I would like to discuss today will focus on:

- The second wave of environmental protection in the United States;
- The reorganization of our state agency to meet new environmental challenges; and
- Water pollutant trading in the Minnesota River Basin.

SECOND WAVE OF ENVIRONMENTAL PROTECTION

I have spent my entire professional career working in the environmental arena. I began as a bench chemist with U.S. EPA in Duluth, Minnesota, dicing small pieces of fish tissue and then analyzing them for PCB and mercury contamination. I also spent 17 years directing the environmental regulatory programs of a large Minnesota utility. Package those two experiences and you can understand how I came to believe that government and industry can and must work together to improve the environment.

So when asked to discuss with you today "market-based" examples to improve Minnesota's environment, I was thrilled – first because of my personal beliefs, but more importantly because Minnesota has several case studies that prove such an approach can succeed.

I call this approach "the second wave of environmental protection" in the United States.

The first wave of environmental protection began in the early 70's thanks to efforts of people such as Senator Gaylord Nelson of Wisconsin and people like you on this committee. It focused on regulating large, industrial polluters. Congress passed laws such as the Clean Air Act, Clean Water Act and the Resource Conservation and Recovery Act.

The first wave was very successful in using command and control to address point source pollution. However, to solve new environmental problems, we need to transition to a "second wave of environmental protection." We need new tools in this second wave to address nonpoint sources of pollution. For example, in Minnesota, it is estimated that more than 50% of our air pollutants come from mobile sources, such as cars and trucks, and that 90% of Minnesota's lakes, rivers and streams are affected by nonpoint sources of pollution such as urban runoff, agricultural activities and failing septic systems.

If we are to be truly innovative and truly effective, states need flexibility -- available only through federal authorization.

In 1996, Minnesota passed legislation to authorize environmental regulatory innovation experiments. We did this so that Minnesota could take advantage of federal innovation programs such as Project XL and the Common Sense Initiative. However, the federal programs did not deliver the promised flexibility. As a result, Minnesota has been unable to use the state innovations statute. **FOOTNOTE 1**

MINNESOTA POLLUTION CONTROL AGENCY (MPCA) REORGANIZATION

As many of you know, Minnesota has a long and distinguished environmental history. Our agency was created in1967 – three years before U.S. EPA came into existence. But to address the new environmental challenges, this agency underwent major reorganization about two years ago. We are no longer structured based on air, water and land – what we once called silos.

We redesigned the agency's service delivery divisions to match three distinctly different geographic areas of the state: a North District, where we have most of our recreational lakes, including Lake Superior, and mining activities; a South District, which is mostly agricultural crop land; and a Metro District, where one-half the population of the state is clustered in the Twin Cities of Minneapolis and St. Paul.

We also decentralized operations because different environmental priorities exist in different parts of the state. We now have 6 offices in outstate Minnesota with 110 employees delivering services in their respective regions. (More information on our website at http://www.pca.state.mn.us/mpca/index.html). **REFER TO OVERHEAD #1 - MAP OF STATE OFFICES AND DISTRICTS.**

A geographic structure means we focus our resources on local issues. For example, in Northern Minnesota, leaking septic systems around lakes are a major source of pollution. We have engineers in the North offices dedicated to this problem. In our South District, we have feedlot inspectors. In the main office in St. Paul, we have our air monitoring team because air pollution from motor vehicles is a major concern in the metropolitan area.

We also created two additional divisions in the agency – one devoted to policy and planning, and the other to environmental outcomes. It's the job of the Outcomes Division to monitor the environment, analyze environmental data, provide leadership with sound information for better informed decision-making, and evaluate the effectiveness of our environmental programs.

For years, we've tracked progress — the number of permits issued, enforcement actions taken, and inspections made. That is what the U.S. EPA requires us to do. We've made assumptions that these activities result in positive environmental outcomes. Yet, at the same time, we still have significant and different environmental problems today. A continued focus on compliance isn't solving our environmental problems. We need a better handle on the very diffuse activities that are stressing our environment — the nonpoint sources that continue to degrade Minnesota's environment.

The reorganization is more than a new process or creating new lines of authority on an organizational chart. The reorganization is about performance. It's about outcomes. We are looking at measurable results. Each employee has a work plan. Each division has a work plan. The agency has a 5-year-strategic plan that is linked to our Environmental Performance Partnership Agreement (EnPPA) – our 2-year contract with the U.S. EPA.

WATER POLLUTANT TRADING

In addition to our reorganization, I would like to share another environmental innovation from the Minnesota laboratory that is both "market-based" and "environmentally friendly."

But I must begin with a brief geography lesson on Minnesota. As you already know, Minnesota contains the headwaters of the Mississippi River. The Mississippi faces serious environmental problems, as does its major tributary the Minnesota River, which winds for 335 miles through the largely agricultural southwestern section of the state until it joins the Mississippi near Minneapolis.

Because the Minnesota River is seriously polluted, the Minnesota Pollution Control Agency strictly limits new wastewater discharges that can occur in the river basin. Here's a picture of the Minnesota and Mississippi rivers. You can see the distinct discoloration of the Minnesota River in this picture. **REFER TO OVERHEAD #2 – CONFLUENCE PICTURE – MINNESOTA RIVER ON TOP.**

In 1988, the U.S. EPA and our agency established a total maximum daily load for the river. This cap places tight restrictions on all existing wastewater treatment plants that discharge into the Minnesota River. It leaves little room for expanded discharges.

So how do we allow industrial expansion in that region of the state while at the same time protecting water quality?

Since 1997, we have used a technique called "pollutant trading." You may be familiar with pollutant trading for air pollution. In this case, we're talking about water pollutants, specifically phosphorus and nitrogen.

Our first experience in pollutant trading was a partnership with Rahr Malting Company in Shakopee, Minnesota, located about 30 miles southwest of the Twin Cities.

As the name implies, Rahr Malting produces barley malt used in brewing. The company wanted to expand in the mid-1990's but the cap on new discharges into the Minnesota River posed an obstacle.

How would an increased wastewater discharge from Rahr Malting fit with the state's effort to restore the river from its highly degraded state? The answer: It wouldn't fit. So we had to find another solution. Water pollutant trading was that solution.

Pollutant trading allowed Rahr to remain competitive in the marketplace while the state was able to move closer to its goal of improving the Minnesota River to the quality of being a swimmable and fishable river once again. **REFER TO OVERHEAD #3 - SHOWING RAHR FACILITY.**

Here's how the trading works:

- Rahr trades its increased "point source" discharge of pollutants for a decrease in "nonpoint source" pollutants coming from agricultural land elsewhere along the river.

- To achieve that, Rahr established a trust fund of $250,000, supervised by an independent board of directors. Farmers and other landowners, including municipalities, apply to the fund for projects aimed at reducing nonpoint pollution in the river basin.
- To date, five major projects have been implemented -- for pasture erosion protection, floodplain restoration, bank stabilization, rotational grazing, meaning livestock are excluded from land near the river, and river channel stabilization.
- Rahr's offset provisions will keep about 14,600 tons of nitrogen and 58,400 tons of phosphorus per year out of the Minnesota River.

Here's a picture of part of one of the erosion control projects supported by Rahr. **REFER TO OVERHEAD #4 – BANK STABILIZATION.** You can read more about the program on our website (http://www.pca.state.mn.us/water/pubs/rahrtrad.pdf).

CONCLUSION

In closing, I would like to comment on another dimension of the "second wave of environmental protection" in this country.

Besides partnerships with local units of government and industry, we must engage the public. We must involve individuals in a collective process of behavior change to truly affect nonpoint source pollution such as air toxics. (The agency's staff report on air toxics is available on our website http://www.pca.state.mn.us/air/airtoxics.html). Under Governor Ventura's leadership, we are moving in this direction in Minnesota.

We must create "environmental literacy" among all our citizens. And that process starts by instilling a sense of environmental awareness in young people. Minnesota has a plan to reach young people and the rest of our citizens -- it's called the "Green Print" and you can read more about it online (http://www.seek.state.mn.us/Greenpt2/table.cfm).

I'm optimistic that citizens will respond to our invitation to become environmental stewards. The state recently published the Minnesota Environment 2000 Report (http://www.pca.state.mn.us/about/pubs/mnereport/index.html) - a snapshot of Minnesota's environment past and present – and future challenges. **REFER TO OVERHEAD #5 – COVER OF REPORT.** Requests far exceeded our expectations.

We need to engage a broader base of support – citizens, the media, educators. Let us, as their elected and appointed representatives – lead the way.

There is a growing understanding by the states of the need to move into "the second wave of environmental protection." In this second wave, both point source and nonpoint source pollution problems are addressed using a myriad of tools – from education and assistance to voluntary and incentive-based tools to command and control regulatory tools. U.S. EPA has an important role to play at the federal level and an important role in supporting state innovations for the second wave of environmental protection.

To make such innovations possible, Congress needs to provide authorization necessary in order for regulatory innovation experiments to occur. Thank you, and I look forward to your questions.

WEBSITES REFERENCED

MPCA Reorganization - http://www.pca.state.mn.us/mpca/index.html

Rahr Malting Company pollutant trading - http://www.pca.state.mn.us/water/pubs/rahrtrad.pdf

Air Toxics Staff Report - http://www.pca.state.mn.us/air/airtoxics.html

Green Print - http://www.seek.state.mn.us/Greenpt2/table.cfm

Minnesota Environment 2000 Report -
http://www.pca.state.mn.us/about/pubs/mnereport/index.html

FOOTNOTE #1

In June 1995, the Minnesota Pollution Control Agency submitted a proposal under the then "new" pilot program referred to as Project XL. In November 1995, the Minnesota Pollution Control Agency proposal was selected as one of the original 8 proposals. The Minnesota Pollution Control Agency Project XL proposal is on the U.S. EPA website at: http://www.epa.gov/projectxl/mpca/page2.htm.

The thrust of this proposal was to have U.S. EPA delegate the ability for Minnesota to conduct 3-5 pilot projects under Project XL to Minnesota. In March 1996, the Minnesota legislature passed the Minnesota Regulatory Innovations Act to facilitate U.S. EPA's delegation of Project XL to the Minnesota Pollution Control Agency. This Act is on the Minnesota Pollution Control Agency's website at: http://www.pca.state.mn.us/programs/projectxl/xl-leg.pdf.

Key provisions of the Minnesota legislation required innovation pilots:

- To produce better environmental results;
- To follow the requirements of the U.S. EPA's Project XL program;
- To comply with provisions of state or federal statutes; and
- To provide a stakeholder input and objection process.

The provisions of this legislation were written with the intention of establishing boundaries for the Minnesota innovation pilots.

Early efforts to develop an agreement between U.S. EPA and Minnesota Pollution Control Agency were sidetracked when state and federal resources were shifted first to work on the 3M Hutchinson Project XL pilot (unsuccessful) and then to work on the Andersen Windows Project XL pilot (successful). In March 1999, agreement discussions were reopened. Two items were identified by the Minnesota Pollution Control Agency as key to a successful agreement: 1) the process established must reduce staff resources needed to develop a pilot project; and 2) the superior environmental performance decision must be delegated to the Minnesota Pollution Control Agency.

The Minnesota Pollution Control Agency and U.S. EPA were unable to develop an agreement that addressed these two key issues. As a result, the Minnesota Pollution Control Agency decided not to pursue the agreement and withdrew its original Project XL proposal.

Additionally, Minnesota was an active participant in U. S. EPA's Common Sense Initiative (Iron and Steel sector and Metal Finishers Sector) and was a leader in the effort to develop the "Joint EPA/State Agreement to Pursue Regulatory Innovations." These paths to conduct experiments have all had limited success.

Minnesota believes that one of the main reasons for limited success is the lack of federal legislation authorizing experimentation. The Minnesota Pollution Control Agency urges Congress to adopt federal legislation, which authorizes U.S. EPA to conduct a limited number of regulatory innovation experiments outside the constraints of federal regulation.

Minnesota Pollution Control Agency

Staff Paper on Air Toxics

INITIAL REPORT
November 1999

Executive Summary

Executive Summary

Air toxics: the invisible threat

The U.S. Environmental Protection Agency's (EPA's) recent national study, the Cumulative Exposure Project (CEP), alerted the nation to the possible risk of cancer faced by Americans over a lifetime of breathing toxic air pollutants in outdoor air. This risk is in addition to other risks, for instance, lifestyle choices such as smoking. The CEP's conclusions resulted from computer modeling to estimate air toxics emissions and, therefore, potential exposure, for each state. The CEP predictions for Minnesota parallel their predictions for other states with similar population centers.

The CEP marked the first time that the EPA had attempted comprehensive modeling to predict ambient concentrations at a census-tract level for each of the 48 contiguous states. The study used 1990 emissions data and a computer model to calculate air toxics concentrations. Few actual measurements of these pollutants are available nationally. Unlike criteria air pollutants, such as carbon monoxide and sulfur dioxide (which have been monitored since the 1970s), there is no national air toxics monitoring system. Minnesota is fortunate to have one of the best toxics monitoring systems in the nation in terms of number of pollutants monitored, duration of monitoring and diversity of monitoring locations.

The Minnesota Pollution Control Agency's (MPCA's) ambient (outdoor) monitoring data generally supports the CEP's conclusion. According to both CEP models and the MPCA's monitoring data, ambient concentrations of 10 toxic compounds exceed health benchmarks[1] in some or all regions of Minnesota. Most of the increased cancer risk that can be attributed to these compounds are due to motor vehicle emissions. *In fact, a comparison of the CEP's modeled average concentrations with Minnesota's monitored concentrations indicates that, for almost two-thirds of the air toxics with both modeled and monitored data, the CEP's model actually* ***underestimated*** *current concentrations.* In other words, the situation appears to be even more serious than the CEP indicates.

This staff paper is intended to encourage further dialog and research on air toxics, and provides the first comprehensive analysis of the air toxics data collected from Minnesota's monitoring system. This analysis points to the need to re-examine MPCA resources and how they may be directed to air toxics issues, and to the need to influence national efforts to most effectively reduce public health risks associated with air toxics.

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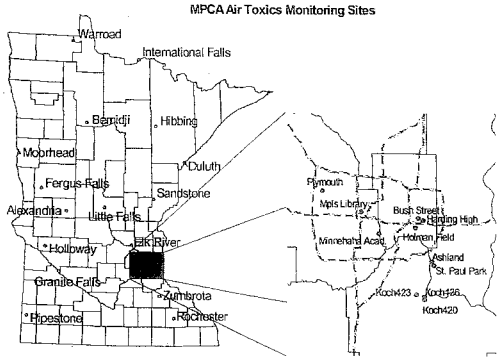
[1] *A health benchmark is a concentration of the pollutant below which there is likely to be no public health concern. If the Minnesota Department of Health (MDH) has drafted a health risk value for a pollutant, that value was used as the health benchmark in this paper.*

Shown are the locations where monitoring data for this paper were collected.



Pollutants of concern

The CEP evaluated 148 toxic air pollutants using computer models. The MPCA monitors (actually measures in the air) 75 air toxics. When compared against health benchmarks, 10 pollutants exceeded health benchmarks in either modeled or monitored concentrations or both.

All 10 of Minnesota's pollutants of concern appear on the list of 33 hazardous air pollutants that the EPA judged to pose greatest threat to public health in urban areas. Taking into account current information, the 10 pollutants fall into two groups:

1. ***current information warrants action***. Enough information exists now to say we are concerned about levels in the ambient air and the potential adverse long-term health effects posed by **formaldehyde, benzene, carbon tetrachloride** and **chloroform**. The first action recommended is sharing information about the chemicals in this group with our partners and the public.

2. ***current information highlights need for more study***. Current data suggest that **ethylene dibromide, 1,3–butadiene, acrolein, arsenic, nickel** and **chromium** are pollutants of concern, but additional information is necessary to confirm their significance. Of the six pollutants in this group, it appears likely that, with additional data, nickel will fall from the list. In addition, diesel particulate matter and/or polycyclic organic matter (POM) may be added after further study.

Group 1: current information warrants action

- **Formaldehyde**: The mean ambient air concentration of formaldehyde measured at every site (25 sites total, both urban and rural) exceeded the cancer health benchmark of 0.8 micrograms (μg) per cubic meter (m^3). Concentrations appear to be stable over the past four years. The widespread exceedances of health benchmarks for formaldehyde, which is a respiratory irritant and probable carcinogen, suggest that a public health issue exists. Roughly two-thirds of the formaldehyde in the ambient air is due to mobile sources — cars and trucks.
- **Benzene**: Both monitoring and modeling data show benzene concentrations above the lower range of the health benchmark in the Twin Cities metropolitan area and in the state's smaller cities, including Duluth, Rochester, Mankato and St. Cloud. About two-thirds of benzene emissions can be attributed to mobile sources. In the metropolitan area, there has been a slight decrease in benzene concentrations since 1991, for which the reason is unclear. Given the magnitude of the measured concentrations, it would appear that benzene, a known human carcinogen, presents a potential health problem in both the Twin Cities metropolitan area and in smaller population centers.
- **Carbon tetrachloride**: Although production of carbon tetrachloride has been banned in the United States since 1996, both monitoring and modeling data show that carbon tetrachloride concentrations in the air exceed cancer health benchmarks everywhere in Minnesota (as well as throughout the nation, according to the CEP). Minnesota's monitoring data do not show a decrease in concentrations since the ban. Carbon tetrachloride is very persistent in the atmosphere and can take decades to degrade. Carbon tetrachloride is a probable human carcinogen and also causes damage to the liver and kidneys.
- **Chloroform**: According to monitoring data, chloroform concentrations pose a concern at one location in Minnesota (the CEP did not predict any exceedances of the health benchmark). This location is in International Falls, adjacent to a U.S. paper mill and across the river from a Canadian paper mill, both of which are likely sources of the chloroform emissions. In addition to being classified as a probable carcinogen, chloroform may be involved in reproductive and developmental disorders. Target organs for chronic chloroform toxicity are the liver and the central nervous system.

Group 2: current information highlights need for more study

- **Ethylene dibromide**: Monitored ethylene dibromide concentrations exceed health benchmarks is some rural locations of Minnesota (the CEP did not predict any exceedances). Measured concentrations were highest in Pipestone, in western Minnesota. More investigation is needed to determine the reasons for the high concentrations in that location. Ethylene dibromide was formerly used as a fumigant for agricultural purpose, but has been banned for this purpose since the 1980s.
- **1,3-butadiene**: Because the CEP model predicted that this chemical would exceed health benchmarks in the Twin Cities metropolitan area and smaller cities, the MPCA has begun to develop the capacity to monitor 1,3-butadiene (the agency currently has no such capacity). Monitoring data will help confirm the reliability of the CEP model

for this pollutant. About two-thirds of 1,3-butadiene emissions are predicted to come from mobile sources.

- **Acrolein:** The CEP estimates that acrolein concentrations exceed the health benchmark in the Twin Cities metropolitan area and in many smaller cities across Minnesota. As with 1,3-butadiene, the MPCA currently has no monitoring data to confirm the accuracy of this prediction, but is studying resources available to begin monitoring. Acrolein is a respiratory irritant emitted mostly by area (64 percent) and mobile (36 percent) sources.
- **Arsenic:** The method used for measuring arsenic concentration in the ambient air is more of a screening tool, as the lower detection limit of the method is greater than the health benchmark. It appears that arsenic concentrations may exceed health benchmarks at some locations, but more refined measurement is needed to confirm this.
- **Nickel:** The CEP predicts nickel to exceed the health benchmark in two census tracts in the Twin Cities metropolitan area. Monitoring data from all locations were well below the health benchmark and, in some cases, even lower than model predictions. More work is needed to measure nickel concentrations in the air in different locations, such as those near suspected point sources. More sensitive techniques might also confirm whether this chemical should be of concern.
- **Chromium:** Minnesota's monitoring data indicate that chromium concentrations may exceed the health benchmark at some locations, but not necessarily those predicted by the CEP. The health benchmark for chromium is less than the lower detection limit for the chromium measurement method used. Most of the monitoring data are below the lower detection limit of this method. More work is needed to be able to better quantify chromium concentrations and to speciate chromium, so that it is possible to determine how much of the most toxic form of this chemical exists in the ambient air.
- **Diesel particulate matter/POM:** Another group of pollutants may be added as a pollutant of concern in Minnesota after more study. Diesel particulate matter contains a "soup" of chemicals, most of which are organic (carbon-based) substances generated from the incomplete combustion of diesel fuel. Polycyclic organic matter (POM) consists of more than 100 compounds, including the group of organic compounds known as polycyclic aromatic hydrocarbons (PAHs). The California Air Resources Board (CARB) lists POM, PAHs and their derivatives as toxic air contaminants. CARB has identified diesel particulate matter as the primary air toxic pollutant of concern and a significant contributor to the overall cancer risk from air toxics. EPA is considering diesel particulate matter for classification as a hazardous air pollutant.

Additive effects of air toxics

It is important to remember that compounds modeled in the CEP and monitored by the MPCA are just a fraction of the anthropogenic (human-caused) pollutants emitted into the air each day. In other words, ambient air contains very many pollutants, of which the MPCA monitors only a few. These pollutants can have synergistic effects, each compound having its own toxicity and, in addition, having more complex toxicities when combined with other air pollutants.

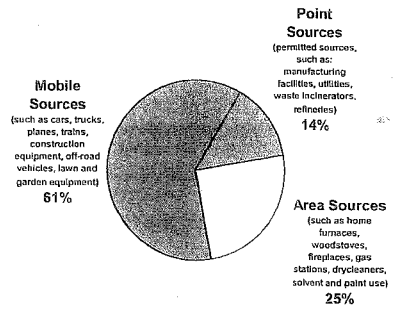
There is little research available on risk to public health from exposure to multiple ambient air toxics. The additive effects of pollutants or the characteristic of a local emission source may make other pollutants, including those not singled out in this paper, a concern.

Currently, the primary health concern from exposure to multiple air pollutants is increased cancer risk. Cancer is the toxicological endpoint of concern for nine of the 10 air toxics targeted in this paper. More work needs to be done to determine the significance of noncancer endpoints, such as cardiopulmonary, neurologic, immunologic and reproductive/developmental systems effects.

Majority of risk is from mobile sources

The majority of the risk posed by all the pollutants modeled in the CEP comes from mobile sources (cars, trucks, buses, etc.). Area and point sources account for about equal portions of the remainder of the risk. In the past, the MPCA has focused most of its resources on regulating point sources. The EPA's recently-published *Urban Air Toxics Strategy* focuses on regulation of area and point sources, and gives less emphasis to specific regulation of toxics from mobile sources. While point sources have an impact at a local level and it remains important to ensure that their emission levels are protective of health, mobile sources impact a much wider geographic area. We believe this is important and must be reflected when the MPCA designs its five-year work plans.

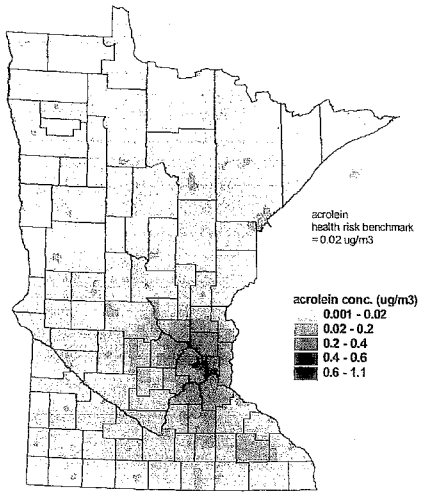
Shown are the contributions by source to excess lifetime cancer risk based on CEP data.



Urban areas most affected

Air pollution is not evenly distributed geographically (except for certain pollutants, such as carbon tetrachloride, which is very persistent and relatively uniform in concentration across the state). A pattern exists for many of the toxics emitted in significant amounts from mobile and area sources (*e.g.,* acrolein, formaldehyde, benzene and 1,3-butadiene). The highest concentrations of toxics tend to be found in the center of the Minneapolis-St. Paul metropolitan area, with concentrations decreasing as one moves away from the urban center. In the rest of the state, most areas have lower concentrations than the metropolitan area. However, many smaller cities (*e.g.,* Duluth, St. Cloud, Rochester, Mankato and Moorhead) also have elevated concentrations of these pollutants that come from mobile and area sources. Quite clearly, where an individual chooses to live, work and play affects exposure.

This map shows predicted acrolein concentrations based on modeling data. Other pollutants in the paper show a similar pattern. The map illustrates the fact that air toxics are not just a metropolitan area issue.



Public sees air toxics as priority environmental issue

The MPCA recently completed extensive public participation efforts aimed at learning about the environmental values of Minnesota citizens. These efforts included seven locations around the state for the "Governor's Forum: Citizens Speak Out on the Environment," a telephone survey to 800 households, and a project called "Comparing Environmental Risks." In each of the three, air toxics issues ranked as a high priority with the public.

- In the Governor's Forums: Citizens Speak Out on the Environment, 100 citizens from the Twin Cities metropolitan area ranked air-quality-related issues as two of their three most important environmental issues. The forums were held in the spring of 1999.
- In the public values survey, also conducted in the spring of 1999, two of the top four environmental threats as ranked by the 800 respondents were related to toxic air emissions (exhaust from cars, trucks and buses and emissions from manufacturing facilities and refineries).
- In the Comparing Environmental Risks project, conducted in 1996 and 1997, the citizens jury, stakeholder and MPCA staff groups all ranked the three sources of air pollution (industrial, mobile and area) at the top of the list in the risk-based environmental priorities project.

Based on this information, it appears that the public, especially in the Twin Cities metropolitan area, is concerned about air toxics and air-quality-related issues. However, results from the public values survey also indicate that members of the public feel that air quality in their own communities is good to excellent and likely to remain so for the next 10 years. These differing perceptions may present a challenge to creating solutions, especially for mobile source issues, which may involve asking individuals to make changes in driving habits.

What's next?

The MPCA has created an Air Toxics Lateral Team, which began work in September 1999. This lateral team consists of three subteams:

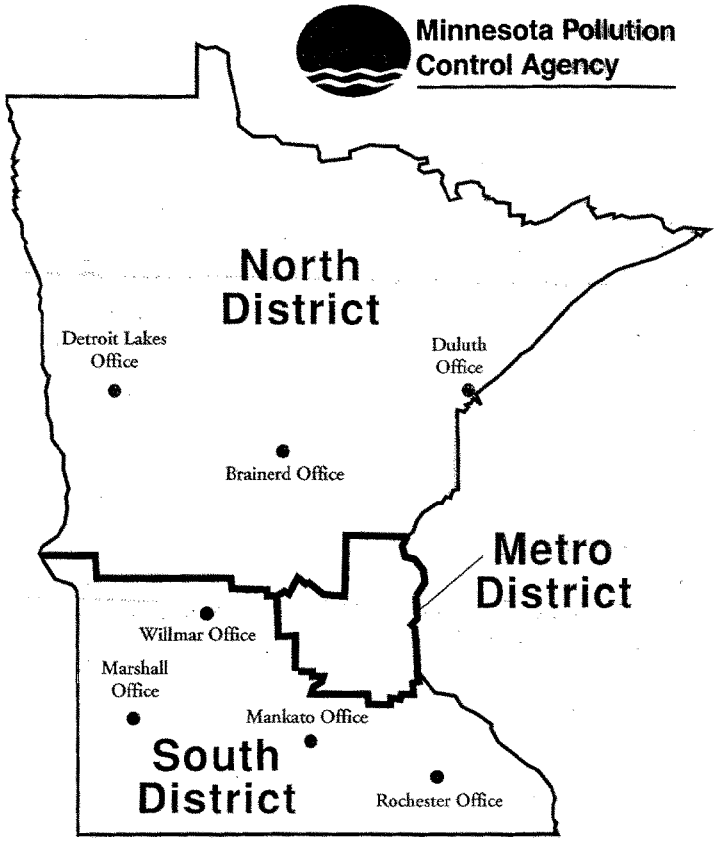
1. Technical Team,
2. Communications and Reduction Strategies Team and
3. Mobile Source Reduction Strategies Team.

The overall goals of this lateral team are:

- to identify, communicate and, when possible, address problems associated with toxic air pollutants, and
- to protect human health and the environment from the effects of air toxics.

The Technical Team continues to study the pollutants themselves. The initial focus of the Communications and Reductions Strategies Team will be on sharing the information contained in this staff paper with the public, and on identifying partners to work with. Communication pieces will be developed for various audiences using information from this paper as well as other information. The Mobile Source Reduction Strategies Team is beginning to develop a work plan that will encompass all of the MPCA's activities directed at mobile sources of air toxics.

STUDDERS OVERHEAD #1

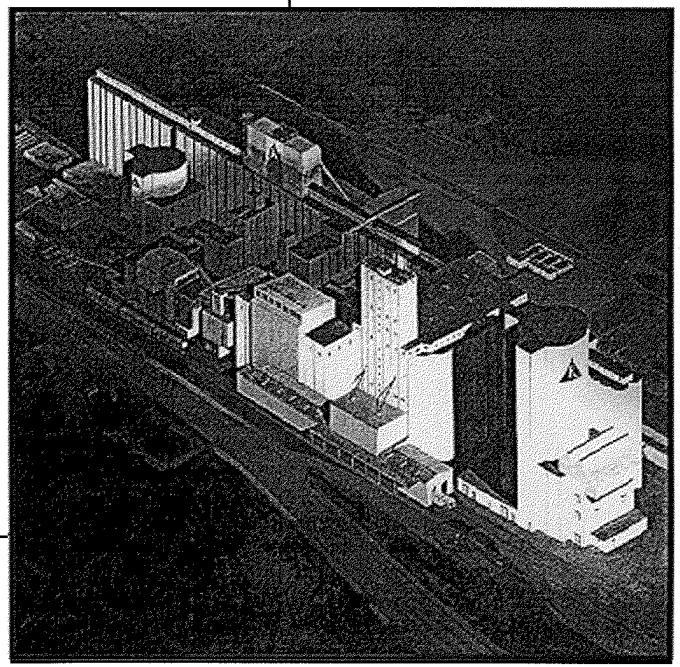


STUDDERS OVERHEAD #2

STUDDERS OVERHEAD #3

WITHOUT TRADING

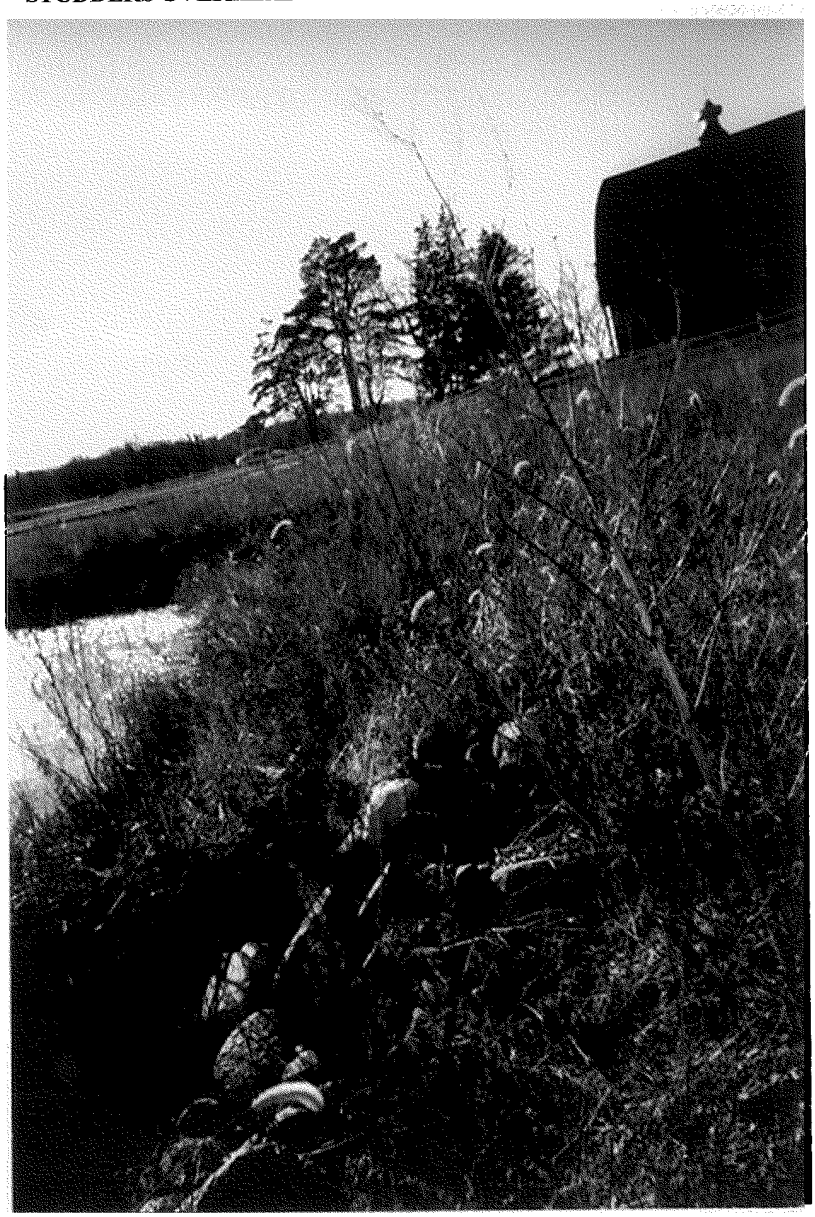
50% plant expansion prohibited



WITH TRADING

Expansion offset by $250,000 in non-point projects

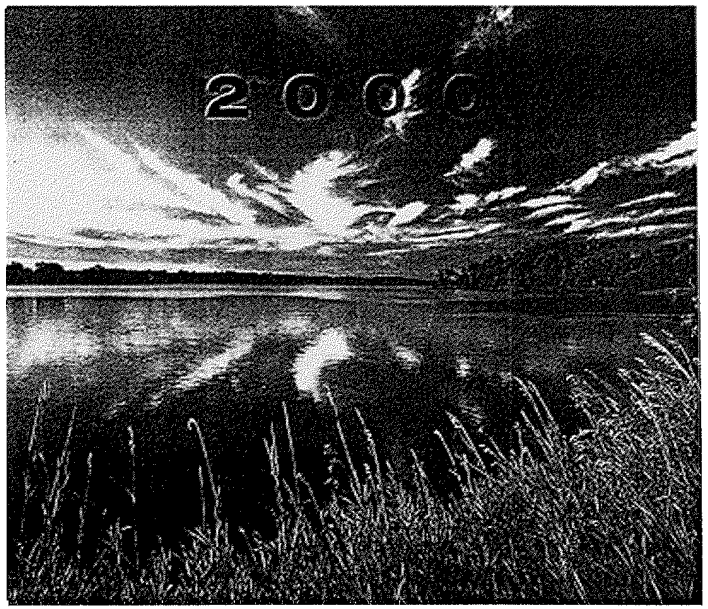
STUDDERS OVERHEAD #4



STUDDL..S OVERHEAD #5

MINNESOTA

ENVIRONMENT



Minnesota
Pollution
Control
Agency

MPLS STAR Tribune Our perspective 7-28-00

Environment 2000

Nature of the challenge has changed

The Minnesota Pollution Control Agency has accomplished something remarkable in its new status report on the state's environmental challenges. Making these issues understandable, let alone palatable, to the average reader is no easy task. But the authors of "Minnesota Environment 2000" have achieved that and more.

Here is a 44-page survey of inherently technical, frequently discouraging territory that is engagingly written, attractively illustrated, rich with history and pleasant to peruse. This is a potentially significant accomplishment, because the report's key message is one most citizens might prefer to duck:

After decades of enormous progress in cleaning up water and air, Minnesota faces challenges that will probably prove more difficult than those it has already met — where progress will depend less on regulating big industrial abusers than on reforming the habits of all households, and changing the collective consciousness about what constitutes pollution.

Back in the winter of 1962, the MPCA report recalls, Minnesotans' attention was seized by two oil spills into the Minnesota River — a million gallons from a petroleum pipeline in Savage, 3 million from a soybean operation in Mankato. The visible impact of these accidents, including thousands of dead ducks, led to the agency's creation.

The goo is long gone, but the river is in worse shape today — not so much from industrial polluters as from agriculture. Soil erosion silts the river and its tributaries, tainting them with fertilizers and pesticides; installation of 200 million feet of new drain tile each year promotes flooding and the undercutting of stream banks. These burdens are augmented by sewage from bad septic systems and substandard treatment plants. Will Minnesotans find the political will to hold farmers and municipalities to the same stewardship standards imposed on industry?

A dozen years have passed since the last air-pollution alert in the Twin Cities; six key pollutants listed in federal law are below the legal limits; metro motorists are now spared the annual annoyance of emissions tests. But the gains achieved through decades of smokestack and tailpipe controls are eroding as more people drive more cars longer distances. Concern is shifting to dozens of "air toxics," such as benzene and diesel soot, that cause cancer and other diseases but have not been monitored or regulated with comparable vigor.

Across rural Minnesota, the report finds fish kills, feedlot fumes, wells tainted by nitrates, frogs deformed by causes not yet known but seemingly related to the waters where they hatch. And at the rural landscape's rapidly receding edge, the agency documents the pollution impacts of development, particularly via the runoff accelerated by roofs and pavement.

But by and large this is not a gloomy report. It chronicles success stories, too, from the cleanup of taconite tailings along Lake Superior, to the separation of storm from sanitary sewers in the Twin Cities, to the restoration of trout streams amid suburban sprawl. And it makes a hopeful argument that Minnesota can keep meeting the challenges of environmental stewardship — if its people will educate themselves about the problems, and about their personal responsibility for them. Citizens inclined to do that will find this report a useful place to start.

Editor's note: A copy of the report can be obtained by calling the MPCA at 651-296-6619; it can be read on the Web at http://www.pca.state.mn.us/about/pubs/mnereport.

Mr. RYAN. Thank you very much, Ms. Studders.

Our next witness is Lisa Polak Edgar, the deputy director of the Florida Department of Environmental Protection.

Ms. Edgar.

Ms. EDGAR. Thank you, Mr. Chairman, members of the committee. Thank you for inviting Florida to participate on this panel today.

My name is Lisa Polak Edgar and I am deputy secretary for planning and management for the Florida Department of Environmental Protection. I am here representing the Florida DEP and Secretary David Struhs.

I would like to talk to you today about two innovative projects that we have been working on in Florida and also briefly discuss our performance measurement system.

You may or may not be familiar with d-limonene. D-limonene is a VOC, a volatile organic compound that is released into the air during the citrus processing process. It is a gas that comes from the oil that you get when you squeeze citrus for juice.

D-limonene is volatile. It reacts with nitrogen in sunlight to form ozone and as such is regulated under the Clean Air Act. However, unlike many other VOCs, it is not toxic. In fact, it is being used increasingly as a substitute for toxic solvents and some industry pollution prevention programs.

D-limonene emissions in Florida generally occur in the winter as the citrus is processed after the growing season in the summer. Of course, ozone formation is not as serious a problem in the winter.

For these reasons, Florida had never developed a serious regulatory plan for this VOC emission for the 26 citrus processing plants in Florida. This left the industry vulnerable under the Clean Air Act and left our State regulatory program incomplete.

As the industry is currently going through some consolidation and plant modernization, our air program discovered that the VOC emissions from these plants were higher than had been estimated.

The time was right to rationalize our regulatory strategy. We began discussions with the industry association and key State legislators resulting in a bill that created a new State-wide standard that will cut VOC emissions in half from the average citrus plant.

The law also provides the ability for plants that exceed the standard to sell credits to other citrus processing plants.

We were successful at the State level because we used the collaborative approach up front, working with the industry and State legislators, because of new technology that allows plants to reduce the d-limonene emissions, and because the emission production credit possibility allows more efficient deployment of new capital investments by the industry for emission control.

I would like to take a moment and share two quotes with you about this program. One is from one of the legislators who worked on it. "It is win-win. Companies have a financial incentive to be cleaner and those that can't afford to upgrade equipment have a way to stay in business."

From the industry, executive vice president of the Processors Association, "We are going to have less paperwork, but a higher standard of performance. We are also going to have more flexibility to meet that standard and that was our preference."

This initiative requires EPA approval of an amendment to Florida's SIP, the State Implementation Plan. We will be submitting this to EPA later this year.

I would also like to talk to you briefly about our performance measurement system. The concept of better measuring and reporting our environmental performance is a central challenge to all environmental managers.

This is not about reducing standards; it is about better understanding the impacts and outcomes of our environmental protection programs.

Performance indicators inform important decisions, thereby increasing our ability to protect the environment. Likewise, free and open assessments of performance foster and promote innovation by pointing out where it is most urgently needed.

At the Florida DEP we have had a performance measurement system in place for about 3 years with information published in a Secretary's quarterly performance report.

For performance measurement to add value requires thorough data analysis, trend identification, and a commitment to productive action to address both longstanding and emerging trends that are troubling.

Tools that we use in this process include focus and watch designations and environmental problem solving. One project that used these tools we called "Team SOS." Data showed that sewage overflows in Orange County, the Orlando area, were totalling over 1 million gallons a year. That is hundreds of thousands of gallons of raw sewage flowing into rivers, lakes, and even homes.

A team was formed to work with Orange County utilities. The point was to find ways to fix the problem, not to just report it. In this instance, the data already existed. Sewage overflows and spills are required to be reported and have been for years.

The difference now was that the data was analyzed and a trend of sewage overflows and spills in certain areas and under certain conditions was identified. Working with the Orange County utilities, over 20 no-cost or low-cost actions and innovations were identified that would help reduce the problem.

The annual amount of gallons spilled was reduced by over 60 percent.

As I mentioned earlier, our performance measurement system has been in place about 3 years. We are now in the process of evaluating our measures, our data collection systems, and our data quality. It is a performance measurement of our performance measurement system, if you will.

Secretary Struhs is committed to the continuous improvement of the ability for all of us to make informed decisions about our environmental quality and this includes improving the functionality of our performance measurement system.

The mission statement of the Florida Department of Environmental Protection is "more protection, less process."

Performance indicators should promote informed decisionmaking at all levels and help us evaluate our activities. It should also help us determine whether some activities are serving process more than protection and aid us in shifting resources and efforts that serve only process toward the higher purposes of protection.

I would like to end by sharing a quote attributed to General George Patton. "Don't tell people how to do things. Tell them what to do and let them surprise you with the results."

Thank you.

[The prepared statement of Ms. Edgar follows:]

Remarks of Lisa Polak Edgar
In Testimony to the
United States House of Representatives
Committee on Government Reform

Subcommittee on National Economic Growth,
Natural Resources and Regulatory Affairs

Chairman McIntosh and members, thank you for the invitation to appear before you this afternoon. My name is Lisa Polak Edgar, Deputy Secretary for Planning and Management at the Florida Department of Environmental Protection (FDEP). I am pleased to have the opportunity to meet with you today. I'd like to talk about the central role that performance measurement plays within the Florida Department of Environmental Protection and in our efforts to continually improve our capacity to deliver services to Floridians and to the millions of tourists who visit our state each year. Today, the concept of better measuring and reporting our environmental performance has become a shared, central challenge to all environmental managers, both in the public and private sectors. Performance indicators inform important decisions, increasing our ability to protect the environment. Free and open assessments of performance foster innovation by pointing out where it is most urgently needed. Further, systematic performance measurement is a fundamental responsibility of government in its stewardship of public resources. Performance indicators help us fulfill this obligation.

First, allow me to provide some historical context. Since the Fall of 1997, the Department has published the Secretary's Quarterly Performance Report, which the public face of our performance indicator system. Over its three-year life, the Secretary's Report was twice recognized as a key innovation in American government by Harvard University's Kennedy School of Government, the Ford Foundation, and the Council for Excellence in Government. But more importantly, readership of the report grew from barely more than 1,000 to over 20,000. Closely associated with the performance measurement system is the "Focus/Watch" management approach. With the publication of each Secretary's Report, the Secretary may designate new "Focus/Watch" areas based upon a reading of the performance measures. "Watch" areas are those in which the data show a moderate cause for concern. Such situations suggest the presence of an emerging trend or pattern and require further investigation prior to taking specific action. "Focus" areas are those that require specific action due to concern about persistently low compliance rates or deteriorating environmental conditions.

Informed Decisions

Americans are increasingly aware of the connections between the decisions they make and the resulting impacts to environmental quality. The Congress appropriates funds in support of environmental education each year in an effort to further this growing awareness. The logic is clear: arming citizens with information about the environmental impacts of their choices enables them to make informed decisions. Environmental

managers at factories and industrial facilities likewise understand the innate connections between decisions and impacts. Indeed, the core purpose of regulation is to influence such decisions. But the nature of these decisions is often far more subtle than weighing whether to pollute or not, though this most basic calculus benefits from a valid assessment of the outcomes of past decisions. Performance measurement increases the efficacy of decisions among citizens, among the regulated community, among policy makers, and within regulatory agencies.

Upon his appointment by Governor Jeb Bush, Secretary David Struhs communicated the value he places on informed decision-making to our employees. In his first memo to staff, he said "we must hold ourselves accountable for our decisions at all levels in the organization. This means that we should not shy away from making decisions, even hard decisions, in doing our jobs. It also means we should push decision-making down to the most appropriate level within the Department. Our management system should seek first to support our professionals in the field, not second-guess them." Secretary Struhs has worked hard to ensure that the agency's performance management system does support our professionals. Secretary Struhs altered past practices in managing Focus areas by using a more deliberative selection process that includes program managers in the final decision. For the Focus areas selected, Secretary Struhs has become directly involved through periodic review sessions in which action plans are discussed and specific needs such as flexibility and resource shifting are discussed. And in May of this year, Secretary Struhs directed us to begin a redesign of the agency's performance measurement system to promote greater utility among our frontline managers and staff. The Secretary is committed to the continuous improvement of the FDEP's ability to make informed decisions regarding Florida's environmental quality.

Innovation

General George Patton once said, "Don't tell people how to do things. Tell them what to do and let them surprise you with their results." Increasingly, Americans are embracing the notion that the private sector, rather than government, should have the primary responsibility for solving environmental problems. A recent Gallop poll[1] indicated 33% of respondents thought business and industry should have the primary responsibility, up from 20% of respondents in 1992. But how can government increase the level of responsibility to the regulated community and yet remain accountable to the American people for protection of the nation's environmental quality?

Performance measurement fosters the necessary accountability required to begin this shift toward regulated communities. In Florida, we've used this approach to craft a statutory performance standard for air emissions from Florida's citrus processing industry. Based on revised permitting requirements of the Clean Air Act, new emissions estimates from citrus processing facilities suggested that some facilities could fall under the major source category because of the quantity of volatile organic compounds (VOC) released to the

[1] The Gallup Poll. Latest: April 3-9, 2000. N=1,004 adults nationwide. Margin of Error +/- 3.

atmosphere. While these emissions are not as harmful or as reactive as similar emissions from other industries, they contribute to ground-level ozone formation in Florida.

The innovative solution crafted in concert with the industry establishes an overall performance standard for VOC that must be met by the industry as a whole. It allows the trading of credits in 1-ton increments between processors to enable those who can eliminate more emissions to sell credits to those who control less, thus allowing flexibility in how to control emissions. The overall VOC performance standard and reporting, testing and record-keeping requirements replaces air pollution construction and operation permits, as well as retroactive case-by-case permitting for past modifications. Significant exceptions are included that prohibit facilities within ozone non-attainment areas from purchasing emissions allowances, though they are permitted to sell them for the emissions they eliminate. Provided that the EPA approves this approach, the solution will address facilities that are not currently regulated for VOC emissions. Overall air emissions from the citrus processing industry will be reduced.

Perhaps more importantly, this legislation directs the FDEP to explore alternatives to traditional regulatory permitting by working with regulated industries, other state agencies and interested parties to arrive at specific limited pilot projects that test new performance-based regulatory approaches. The Legislature has specified that these approaches should provide reductions in the transaction costs between government and the regulated community while providing an economic incentive to reduce pollution.

Performance measurement used systematically serves also as a diagnostic tool to suggest areas where innovation is needed. Among the first "Focus" designations made within the Secretary's Quarterly Performance Report was the issue of nitrogen oxide (NOx) emissions in Florida. Performance data indicated that emissions of NOx had increased throughout the decade of the 1990's in Florida, while emissions of other major air pollutants had declined. The Department's air program was directed by then-Secretary Virginia Wetherell to "bring forward a program that will accelerate our investigation into the consequences of NOx deposition, and through research determine the levels of NOx that should concern us. I am also asking that industry join us in this research." Two years later, Secretary Struhs seized an opportunity to fund such an investigation and provide a dramatic impact on the total air quality of the Tampa Bay region. Under an agreement with Tampa Electric Company, the company's NOx emissions will be cut dramatically in the coming years. For the first time ever, emissions from every boiler in the company's fleet will now be scrubbed to control sulfur dioxide, the pollutant that causes acid rain. The company will also be cooperating with DEP to study the effects of air pollution on the waters of Tampa Bay, including financial support of $2 million. The Bay Regional Atmospheric Chemistry Experiment (BRACE) will define the air source contribution of nitrates to Tampa Bay by making intensive measurements at multiple sites for several years to support more precise estimates of atmospheric load of nitrates and ammonia to the bay system. Performance measurement catalyzes innovation by first

diagnosing problem areas in need of creative interventions and then creating the necessary framework of accountability, enabling trust among all involved.

Good Government

Floridians have entrusted to our care some of our state's most sensitive natural resources. They've also entrusted us with a range of powers in protecting those resources, as well as their hard earned tax dollars. Each of these confidences demands an honest accounting. This notion of 'transparency' in governance is of the utmost importance to Secretary Struhs. In communicating this value to staff, Secretary Struhs noted that "as a public agency, we must expect and even desire to operate in what former EPA Administrator Bill Ruckelshaus once called 'the fish bowl.' That means we should always err on the side of being more inclusive, not less. Clear in communicating our intentions, not opaque. And willing to not just communicate our positions and decisions but the rationale that we used in reaching them." Performance measurement forms the language of such a dialogue. In Florida, we call it "government in the sunshine."

This commitment to transparency is reflected in the Department's performance measurement system. The essence of program performance is described with a hierarchy of indicators that portray program goals and objectives. In practice, this hierarchy of performance measurement is captured through the use of "tiers." These tiers describe a "results chain" that one can follow from legislative appropriations to specific activities conducted by the agency, which in turn, ultimately result in changes in the quality of Florida's air, water and soil; the scope of habitat protection on our land and in our waters; and public health, safety and recreation.

Over a year ago, Governor Bush directed each of his agency heads to formulate a brief mission statement that would guide each agency toward fully implementing his vision of public service. Secretary Struhs crafted such a mission statement for the Department of Environmental Protection: "More Protection, Less Process." This simple statement encompasses the idea that the public sector is not as nimble as it needs to be in today's society. Performance indicators help us constantly evaluate our activities to determine whether they are serving protection or process. Those resources that serve only process are shifted toward the higher purposes of protection. And in the end, these same performance indicators help us report our stewardship to the public we serve.

Concluding Remarks

In his foreword message in the eighth Secretary's Quarterly Performance Report, Governor Jeb Bush challenged the Department of Environmental Protection to "continue building upon early successes in open management and inclusive governance." This challenge is the foundation of our next generation efforts. Governor Bush's leadership in the public sector use of information technology has spurred the Department to move beyond the printed page to harness the power of Internet technology. This will enable the Department to provide an unprecedented level of public access to environmental quality information as well as the many Department activities undertaken to protect that quality. These advances will likewise support agency staff, enabling them to maximize their

effectiveness on the job. The growing technology infrastructure will slash transaction costs by creating new opportunities for electronic commerce between the Department and other local, state, and federal agencies, as well as the regulated community.

The Department's commitment to performance measurement is founded upon our belief that we are morally obligated to facilitate the best possible decision-making among our citizens, our regulated community and our staff. We believe that performance measurement in the area of environmental protection will foster a greater degree of innovation in protecting Florida's environment. And we believe that the trust that the people of Florida have vested in us demands it.

Thank you.

Citrus Plants Must Curb Emissions

By Joni James
Staff Reporter of The Wall Street Journal

Florida lawmakers have approved the first comprehensive plan in the state's history to regulate emissions from citrus-processing plants.

Last week, during the final days of the 2000 session, legislators approved the first statewide standard for how much of a certain material the state's 26 citrus-processing plants can release into the atmosphere. Pending approval by the U.S. Environmental Protection Agency, the plan would take effect in 2002.

The material in question is d-limonene, commonly called citrus oil, which is released as a gas when orange rinds are dried as part of the process for producing cattle feed. Though not toxic, it's considered a "volatile organic compound" by the EPA because when released on hot, sunny days, it can combine with nitrous oxide to create ozone, which can cause health problems for children and the elderly.

The most novel part of Florida's new regulation plan for d-limonene is a program that would allow plants that do better than the state's new clean-air standard to sell emissions credits to plants that violate the standard. The state would regulate the transfer of emission credits, but it would have no say over how much money a processor could charge for the credits.

Expecting 'an Award'

Proponents—including the state Department of Environmental Protection, a citrus-growing lawmaker and the industry—think the plan's financial incentive will work despite its demands: The new statewide standard will require the processing industry to emit about 50% less d-limonene than the average plant does now.

An EPA spokesman said this week that the agency won't comment on the plan until it's filed for approval, which state officials plan to do within the year. But David B. Struhs, Florida's environmental protection secretary, is optimistic, in part because the EPA for years has encouraged the trading of pollution credits among power companies nationwide.

"We're expecting EPA to give us an award for this," Mr. Struhs says. "We're already clearing the walls for the plaque."

At issue is how processors handle the

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Lawmakers Pass Plan To Curb Emissions From Citrus Plants

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rinds and pulp left over after orange juice is removed. Right now, most plants squeeze the leftover rinds to release the citrus oil, which is captured and sold for use in resins and solvents. Then the rinds are dried at 700 degrees for use in livestock feed. In the drying process the remainder of the d-limonene is released into the atmosphere.

Under the new plan, processors would be required to capture or collect at least 65% of the oil before drying the rinds. On average, most plants now capture between 40% and 45%, according to the Florida Citrus Processors Association in Winter Haven. By improving equipment and techniques to squeeze rinds harder, processors can meet the higher standard, officials say. Moreover, processors that extract more oil than required from the rinds would be able to sell credits to other plants. For example, if a plant captured 80% of the oil, it could sell a credit for 15%. A processor that is extracting only 50% of the oil could buy that 15% credit and so meet the required 65% rate.

"It's win-win," says Republican Rep. J.D. Alexander, a third-generation citrus grower from Frostproof who sponsored the legislation. Companies have a financial incentive to be cleaner and those that can't afford to upgrade equipment have a way to stay in business, he says.

New Standard

Florida has never had a significant regulatory plan for the citrus-processing industry. In large part, regulators were too busy regulating other, dirtier industries under the 30-year-old federal Clean Air Act, says Mr. Struhs, who's been Florida's chief environmental regulator for a year.

The department first became concerned about the lack of oversight about five years ago, when a processor sought a permit for a change to its facility. The department's investigation revealed much higher d-limonene emissions than expected. But it also highlighted a loophole in state policy that grandfathered in all plants that were established before 1982. The only time those plants, which account for most of Florida's processors, would come under the state's scrutiny was if they were significantly renovated. That prompted the department to begin talking about tougher standards. But it wasn't until the past year that a clear path emerged, says Clair Fancy, director of the department's air-regulation bureau.

Florida's citrus processors signed on to the plan, in part because it provides more flexibility, says Lisa Rath, executive vice president of the processors association. "We're going to have less paperwork but a higher standard of performance. But we're also going to have more flexibility to meet that standard [through emission credits]," says Ms. Rath. "That was our preference."

Mr. RYAN. Thank you, Ms. Edgar.

Now, we will hear from Erik Olson, the senior attorney, at the NRDC.

Mr. Olson.

Mr. OLSON. Thank you. Thank you for having me this afternoon.

I wanted to talk a little bit about some of the debate that has been going on about this very issue for some time. Obviously, this is not a new issue. I also want to talk about some of the innovations that we have embraced that States have adopted. Finally, I wanted to note some of the basic criteria that we think need to be met so that we can ensure continued, "cooperative federalism," as it has often been called by academic commentators.

As we all know, since EPA was created 30 years ago, there has been enormous improvement in environmental protection and in public health standards and in results. Much, if not most, of that has been the result of vigorous work at the State level because EPA simply doesn't have the resources or the knowledge or the ability to put into effect most of the Federal regulations without State cooperation and help.

Many State innovations have occurred that you have heard about, and some of them have been very impressive. They often occurred because there was a Federal requirement that there be air quality improvements or that there be some other improvement.

The States were creative and thought of new ways to achieve those goals. There are many other examples that are cited in our testimony such as improved right to know requirements that have been adopted in California and New York that ended up being part of the Federal law.

Another example is in Wisconsin and in Iowa and in New Jersey. There are strong groundwater protection programs that still haven't made it into Federal law that were a result of innovative State programs.

Similarly, in California the citizens adopted a proposition, Proposition 65, that imposed right-to-know requirements for polluters that were creating toxic emissions or toxic exposures to consumers. This law which resulted in huge reductions in toxic exposures to citizens simply because there were right-to-know requirements that flowed if there were exposures that had not been otherwise known about.

So, I think that there are many lessons that we can learn from innovations at the State level and many success stories that could be told, certainly more than can be told in a 2-hour hearing.

There are a couple of very important principles that need to be taken into account in developing cooperative federalism at the Federal level.

First of all, we need to recognize that there is huge variation among the States. You have on the panel today represented some of the leaders in State innovation and in going beyond what minimum Federal requirements there are.

Unfortunately, there are many followers and there are even some that oppose Federal standards or even oppose going forward with many of the basic environmental protections and health protections that are necessary. We need to keep that in mind.

Second, obviously, there are many reasons that States have a very important role to play. First of all, as has been mentioned, they have greater local knowledge of environmental conditions locally, very often. They have more resources and expertise and political support locally than the Federal Government does often.

They also have more local political knowledge, which can be extremely important. As has been mentioned, they are the laboratories of democracy and often can be very innovative.

However, there are certainly some countervailing principles that have always been important to consider.

For example, it has been mentioned that some States can be susceptible to brown mail, where a large, powerful company tells a State that if the State cracks down on it, it threatens that it will see fit to move out of the State, move its operations elsewhere.

Second, there is a concern about inaction by some States on very basic public health problems. Mr. Kucinich mentioned the cryptosporidium issue where there have been disease outbreaks, yet many States, in fact, virtually all States, if not all States, failed to adopt any standards for cryptosporidium until they were federally required.

There are underground storage tanks and other examples where States did not act until they were federally required to do that, for many reasons. Very often it was for lack of resources and other reasons.

Third, the level playing field is very important to many States. There can be a race to the bottom, certainly not by all States, but some States trying to attract business or trying to avoid political problems will go ahead and adopt less stringent standards. Probably one of the better-demonstrated examples of that is where 19 States have adopted laws that prohibit the State from going beyond the Federal minimum requirements.

So, there are many reasons that we need to make sure that there is a so-called Federal gorilla in the closet. Someone there at the Federal level that can help State officials who are trying to do their job by giving them someone to point to—Federal presence—to make sure that they can do their job well.

Many recent examples of polluter lobby groups trying to cut State regulatory agency funding simply because they are trying to reduce the State's ability to take regulatory enforcement action are additional examples of the need for a Federal presence.

So, we do believe that States have an important role, that they should and must be innovators and that the Federal Government has an important role in encouraging that. The Federal Government needs to set national standards and set health goals, and in addition, some minimum safeguards for citizen participation.

But States should be free to go beyond that and certainly should not be preempted from going beyond that.

Thank you.

[The prepared statement of Mr. Olson follows:]

NATURAL RESOURCES DEFENSE COUNCIL

TESTIMONY OF
ERIK D. OLSON
SENIOR ATTORNEY
NATURAL RESOURCES DEFENSE COUNCIL

BEFORE THE
SUBCOMMITTEE ON NATIONAL ECONOMIC GROWTH, NATURAL RESOURCES, AND REGULATORY AFFAIRS
OF THE
COMMITTEE ON GOVERNMENT REFORM
U.S. HOUSE OF REPRESENTATIVES

HEARINGS ON
"LESSONS FROM THE LABORATORIES OF DEMOCRACY:
ENVIRONMENTAL INNOVATION IN THE STATES."

SEPTEMBER 13, 2000

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I. INTRODUCTION.

I am Erik D. Olson, a Senior Attorney at the Natural Resources Defense Council (NRDC), a national, non-profit public interest organization with over 400,000 members dedicated to protecting public health and the environment. We appreciate the opportunity to testify at today's hearing on the important issue of state-federal relations in environmental programs, often referred to as "environmental federalism."

The appropriate state and federal roles in environmental programs have been debated for decades, beginning well before President Nixon created the U.S. Environmental Protection Agency thirty years ago through Reorganization Plan Number 3 of 1970 (July 9, 1970), shortly after the first Earth Day in April of that year. (*See*, www.epa.gov/history/org/origins/reorg.htm) From the 1940's on, the federal government's role in the environmental field traditionally was limited to conducting research, assisting state authorities, and occasionally issuing generally voluntary, hortatory federal guidelines—such as drinking water guidelines. States usually were free to adopt or reject the federal standards.

It became increasingly clear by 1970 that serious air and water pollution problems and other environmental crises had reached a critical point. Infamous problems such as the Cuyahoga River catching on fire, Lake Erie essentially dying due to water contamination, air pollution in Donora, Pennsylvania and elsewhere killing local residents, and a series of drinking water contamination problems and waterborne disease outbreaks made it clear that the federal government had to step into the breach. Many states were unable or unwilling to address these and other problems.

The enactment of the major federal environmental statutes by Congress has been a widely-touted triumph, immensely successful at cleaning up the environment, popular with the American public, and heralded internationally as landmark events in the history of environmental protection. These statutes, such as the Clean Air Act, Clean Water Act, and Safe Drinking Water Act, generally

adopted the "cooperative federalism" model. The federal government sets national standards, while states use their special knowledge of local issues to implement and apply those standards, with some remaining federal oversight and enforcement presence. States are expected to live up to national environmental and health standards, but generally are free to use their creativity and to go beyond federal minimum requirements.

II. THE IMPORTANCE OF COOPERATIVE FEDERALISM

The concept of environmental federalism seeks to take advantage of the best skills, knowledge, resources, and authorities that state and federal governments have to offer. This approach recognizes that states often have greater localized knowledge of environmental conditions and problems than the federal government may have, and recognizes that the federal government needs "the substantial resources, expertise, information, and political support of state and local officials" to make the programs work.[1] It also acknowledges that state officials often are more knowledgeable about the local players and political landscape than are federal officials. Moreover, cooperative federalism seeks to capture the benefits of the fact that the states are the "laboratories of democracy," because "states are a natural laboratory for testing new ideas."[2]

However, cooperative federalism also acknowledges the realities that states can be more susceptible to local political influences and political "brownmail" from powerful local industries that threaten to withdraw from the state or to produce political repercussions if state officials crack down on pollution. In Senate hearings held in May 2000 on this issue, several state officials publicly acknowledged the continuing need for a strong federal presence, for federal expertise and resources,

[1] Dwyer, "The Practice of Federalism Under the Clean Air Act," 54 Md. L. Rev. 1183, 1224 (1995).
[2] Markell, "The Role of Deterrence-Based Enforcement in a 'Reinvented' State-Federal Relationship: The Divide Between Theory and Reality," 24 Harvard Envir. L. Rev. 1, at 52 (2000) (quoting EPA Deputy Administrator Fred Hansen).

and for federal political support for states and localities taking on powerful local interests.[3] Importantly, these state officials also acknowledged that the problems they had experienced with what they viewed as a lack of federal flexibility were "attitudinal" problems, not statutory problems; no overhaul of federal environmental laws was suggested or embraced. The cooperative federalism approach seeks to recognize that some states may not be able to muster the political wherewithal to address pollution problems that primarily affect downstream states, and acknowledges that states often have fewer scientific and technical resources than the federal government.

III. RATIONALE FOR A SIGNIFICANT FEDERAL PRESENCE IN ENVIRONMENTAL LAWS.

In these days when the federal government's role in environmental programs has come under increasing attack from some (though certainly not all) state officials, it is worth briefly reviewing the rationale relied upon by Congress, academic commentators, and many other observers for supporting a significant federal presence under our environmental statutes. Among the most critical factors are:

- **State Inaction in the Face of Significant Environmental and Health Problems.** Before the adoption of the Clean Air Act, Clean Water Act, Safe Drinking Water Act, Resource Conservation and Recovery Act, and other major federal statutes, many states simply failed to address critical and obvious environmental and health problems. For example, although the U.S. Public Health Service had issued drinking water standards since the 1940's, and although 130 waterborne disease outbreaks had been documented in the previous decade, as of 1971, only 14 states had adopted these standards, and enforcement of the standards was "poor."[4] Similar state inaction was documented in the air, surface water, hazardous waste, and many other areas.
- **Need for a "Level Playing Field" Nationally for Industry to Avoid a "Race to the Bottom."** In the words of a leading treatise by academic legal commentators, "it is widely accepted that federal standards help prevent states from succumbing to local economic pressures."[5] Without minimum federal standards, there is immense pressure on states competing for industries and

[3] Hearings Before the Senate Environment and Public Works Committee on Environmental Federalism, May, 2000.
[4] Senate Environment & Public Works Comm., A Legislative History of the Safe Drinking Water Act, at 536, 538-39, Serial No. 97-9 (Feb. 1982), reprinting H. Rep. 93-1185, 93rd Cong. 2d Sess. (1974).
[5] R. Percival, A.S. Miller, C.H. Schroeder, and J.P. Leape, ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY, at 119-20 (1996).

jobs to adopt weak environmental standards and enforcement policies—even though over the long run, such weak policies are economically destructive. The "race to the bottom" is especially likely where the environmental or health problems are not immediately readily visible or traceable to particular sources of pollution. This makes it difficult for the public to recognize the problem—even if objectively it is extremely serious. A legal brief recently filed by five states makes this point surprisingly bluntly. The states noted (in opposing a court decision that will undermine EPA's ability to enforce where a state later comes in and settles with the same polluter), that "by making it harder for EPA to maintain a level playing field nationally, the panel's decision opens up states to the risks that they will suffer the adverse effects of pollution generated in neighboring states and that regulated entities in other states will gain an unfair competitive advantage over another state's law-abiding competitors."[6]

- **The Growing Use of State "No More Stringent Than Federal Standards" Clauses Demonstrates the 'Race to the Bottom" is at Work Today.** By 1995, 19 states had adopted at least one statute (and sometimes more than one law), prohibiting the state from adopting environmental rules that are more stringent than federal requirements.[7] Some of these "no more stringent than" clauses apply to all state environmental programs; others apply only to certain state laws—such as a state clean air law. The increasing use of such clauses lead a leading commentator to note:

  > the trend among state legislatures to embrace federal minimum standards as state maximum standards, viewed in the context of the states' historical failure to produce socially desirable environmental improvements through state legislation and regulation, provides some evidence that the concern about a 'race to the bottom' in the absence of federal minimum standards remains valid.[8]

- **Right to Baseline Minimum Public Health and Environmental Protections for All Americans.** When Americans travel across the country, they expect to be able to breathe the air, drink the water, swim, fish, and enjoy the environment wherever they go. They do not expect that their family's health, or that of their fellow citizens, will be put at risk, depending upon the state in which they are traveling or living. A healthy environment is the foundation of a long-term healthy economy and high quality of life for the U.S. Only with minimum federal standards can we be assured that all Americans, and our national environmental heritage are protected. As one academician has put it, the nation "decided to make a moral—and arguably constitutional—commitment to afford all citizens the same basic level of protection."[9]
- **Only the Federal Government Has the Scientific and Technical Resources and Expertise, and the Economies of Scale, to Adopt Many Standards.** With the increasing complexity of the scientific and technical issues that are raised by standards for protecting public health and the environment, most states simply do not have the resources or scientific expertise to adopt standards that are scientifically sound and technically well grounded. This is particularly the case as we move towards more specific, highly technically-sophisticated standards that must take into account the technical capabilities of major industries. The more tailored a standard is to a

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[6] Amicus Curiae Brief in Support of EPA's Petition for Rehearing En Banc on Behalf of the States of New York, California, Connecticut, Iowa, and Louisiana, at 2 (filed Nov. 23, 1999); see Harmon Industries v. Browner, 191 F.3d 894 (8th Cir. 1999).

[7] Organ, "Limitations on State Agency Authority to Adopt Environmental Standards More Stringent than Federal Standards: Policy Considerations and Interpretative Problems," 54 Md. L. Rev. 1373, 1376 n. 13 (1995).

[8] Ibid at 1393.

[9] Steinzor, "Reinventing Environmental Regulation Through the Government Performance and Results Act: Are the States Ready for the Devolution?" 29 Env't L. Rep. (ELI) 10074, 10084 (1999).

particular industry (as opposed to the often-criticized "cookie cutter" approach), the more scientific and technical expertise is required to promulgate the standard. Local and state authorities often lack the resources and political capability to face down major multinational companies that have the financial, technical, and political resources to bury them in studies, litigation, political challenges, and other diversions that may make it virtually impossible for the state to act. While in some areas a handful of states have developed significant scientific and technical expertise, because of "the substantial economies of scale in having environmental standards adopted on a national scale," often only the federal government has the resources to adopt complex standards.[10]

- **The Need for a Federal "Gorilla in the Closet."** State officials, while usually not saying so in public, often admit privately that without mandatory federal requirements, it can be difficult for them to muster the resources and political support to adopt important environmental and health standards, or to take enforcement actions. They sometimes need to point to the federal "gorilla in the closet" to take actions that they feel are necessary, but politically difficult, to take.
- **The Need to Address Interstate and Trans-boundary Pollution Problems.** States may have little incentive to impose restrictions on pollution by powerful local industries (or others for that matter) when the ill-effects of that pollution are most heavily felt in other states. Thus, the "river of smog" that travels from the Midwest to the Northeastern U.S., the acid rain problem exacerbated by tall stacks that put pollutants high into the atmosphere to come down and contaminate communities hundreds of miles away, and the pollution of interstate rivers, estuaries, and the Great Lakes, all are illustrations of the problem. The State of New Hampshire and several other states, for example, have filed petitions to seek redress for such interstate air pollution problems.[11]
- **National or International Industries Benefit from National Standards.** Major corporations actually benefit from the relative predictability and centralized authority that comes with a federal environmental legal framework—even though the states are free to adopt more stringent state rules that tailor these minimum federal requirements to local needs.
- **Ironically, Federal Minimum Standards Have Been Shown to Spur State Creativity and Experimentation.** Because federal environmental laws have stimulated states to establish their own agencies, staffs, and statutes to carry out environmental programs, experts have found that rather than stifling state creativity, adoption of federal environmental law "paradoxically gives states greater opportunity and incentives to undertake policy experimentation...."[12]

IV. EXPERIENCE WITH ENVIRONMENTAL FEDERALISM: HOW IT'S WORKING.

Most states have responded to the challenge in federal environmental statutes by adopting state programs that EPA has approved for delegation. Thus, according to a recent law review summary[13], delegations include:

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[10] Percival et al., supra note 4, at 120.
[11] "Initial Analysis of Section 126 Petitions Implicates 16 States, D.C.," 29 BNA ENV'T REP. at 5 (5/1/98).
[12] Dwyer, supra note 1, at 1224.
[13] Markell, supra note 2, at 32 (citing ECOS data).

- **Clean Air Act:** 42 States
- **Clean Water Act:** 34 States
- **Hazardous Waste (RCRA):** 37 States
- **Drinking Water:** 39 States (49 States have at least partial primacy for public water systems)
- **Pesticides (FIFRA):** 39 States.

Some of these state programs can be pointed to as models—demonstrating that the "laboratory of democracy" truly is at work. Indeed, some states have put enormous effort into innovative laws and programs that build upon or take a different tack from federal requirements. In many cases, these innovative state programs later are adopted by other states, or by the federal government.

Recent examples include California's and New York's drinking water right to know requirements, recently adopted into federal law under the 1996 Safe Drinking Water Act Amendments. In other states, including Wisconsin, Iowa, and New Jersey, state authorities have adopted innovative programs to protect groundwater from contamination. In California, Proposition 65 requires, among other things, disclosure to consumers of exposure to toxic chemicals in their food, water, and consumer products, with stiff penalties for violators.

However, these innovative state laws and EPA's delegation of programs to states do not tell the whole story. Programs that EPA delegated to many states are not living up to legal requirements. Enforcement problems at the state level abound, as do problems with inadequate state resources, poor data management and compliance tracking, and failures to address significant environmental problems. For example:

- **Serious State Enforcement Inadequacies Repeatedly Have Been Documented by GAO and the EPA Inspector General (IG).** A plethora of GAO and EPA IG studies have documented that many states simply are unable or unwilling to effectively enforce certain federal programs—even in the face of legal requirements to do so. Among the most significant problems are: (1) inadequate monitoring of regulated parties; (2) failure to pursue "timely and appropriate" enforcement actions against significant violators; (3) failure to recover economic benefit of noncompliance; (4) inconsistencies in the approaches used to enforce and in the level of enforcement activity; and serious problems with enforcement and other data.[14] One recent case

[14] Many of these studies are chronicled in detail by Markell, supra note 2, at 43-51.

is Virginia's failure for many years to take meaningful enforcement action against Smithfield Foods' swine slaughtering and processing plants for major violations of its clean water permit, ultimately requiring EPA to step in with federal enforcement action, alleging serious environmental harm, false reporting, and destruction of records; a recent court decision affirmed liability and a large multimillion dollar penalty.[15]

- **Failure to Track and Document Violations.** GAO, the EPA IG, and EPA itself have repeatedly documented that many states with delegated programs simply do not adequately track compliance and violations, nor do they report even many significant violations to EPA as required.[16] In one recent example, EPA made front page news when it completed an audit of 27 states' drinking water programs and found that states were reporting only 19% of known Maximum Contaminant Level (health standard) violations for chemicals in tap water. Moreover, states reported just 11% of treatment standard violations, and only 10% of monitoring violations to the agency. The "good" news was that states reported 68% of total coliform violations to EPA.[17]
- **Inadequate State Resources.** While some states have successfully sought significant resources to implement their environmental programs, others have fallen well behind the curve. Frankly, in some cases polluters have sought to weaken state regulation and enforcement by lobbying at the state level to reduce funding for state environmental regulators, thereby starving their regulatory and enforcement efforts. This is another reason EPA oversight to assure adequate state resources is important, and in the long run helpful to state agencies who are just trying to do their jobs. A recent review of state spending found huge disparities among the states, and said that it was likely that "some states are committing severely inadequate resources to environmental protection." For example, state expenditures per capita on environmental programs varied by almost four-fold; spending per ton of toxic emissions varied even more, with Mississippi spending over 38-fold less per pound of toxics than Colorado.[18] A recent study of state hazardous waste cleanup programs found serious state program resource problems. For example, New York's program ran out of money in 1999, Kansas, Idaho, Wyoming, and Puerto Rico had zero balances, Missouri had a negative balance, Nebraska and D.C. had no cleanup fund, eight states had balances of under $1 million, and 14 states had fund balances of $1 million to $5 million.[19]
- **State Inaction on Expired Permits.** Recent studies by GAO, the EPA IG, and others have shown that there is a pattern in many states of failure to address expired state permits for water and air polluters. In Michigan, for example, 65% of major facilities were operating on expired water permits, and many other states had serious backlogs, according to a 1995 GAO report.[20] A more recent analysis of 6,700 permits for major water pollution sources nationally found that more than half of all permits for major polluters had expired in seven states, and that more than one-third are expired in 17 states.[21] Expired permits not only violate the law, they fail to assure

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[15] See U.S. v. Smithfield Foods, Inc., 191 F.3d 516 (4th Cir. 1999). The court did require a recalculation, however, of the 4% error margin portion of the penalty.
[16] Ibid; see also Steinzor, supra note 8.
[17] EPA Office of Groundwater and Drinking Water: "Draft Report to the Data Reliability Stakeholders Work Group on the Quality of the Data in the Safe Drinking Water Information System," (September, 1999)
[18] Steinzor, supra note 8, at 10080.
[19] U.S PIRG, "Superfund: A Vital Federal Safety Net" (2000).
[20] Quoted in Steinzor, supra note 8, at 10082.
[21] Friends of the Earth and Environmental Working Group, "Clean Water Report Card: How the Regulators are Keeping Our Water Clean" (2000).

progress towards improving air and water quality, and shut the public out of the process of seeking water quality improvements.

- **State Failures to Address Major Environmental Problems.** There is a long history, continuing over the past 30 years, of state failures to address significant environmental problems, sometimes even when they are required to do so under federal law. For example:
  - ⇒ State Inaction on *Cryptosporidium* in Tap Water. Despite several significant outbreaks from this disease-carrying organism, including the largest documented waterborne disease outbreak in U.S. history in 1993 in Milwaukee Wisconsin in which over 400,000 people were sickened and over 100 died, to our knowledge *not a single state* adopted a *Cryptosporidium* standard for tap water until mandated to do so in 1998 EPA rules.
  - ⇒ State Inaction on Concentrated Animal Feeding Operations (CAFO). While it is widely recognized that CAFOs are major sources of surface and ground water pollution, most states have done little to address the problem. Officials in the few states that have begun to tackle the issue, such as Maryland, have privately expressed concerns about threats that industry may move their businesses to other, more lax, states.
  - ⇒ Failure to Issue Maximum Pollution Loading Requirements for Nutrients and Other Water Pollutants. Over 25 states have been sued for failing to adopt the required "Total Maximum Daily Load" (TMDL) rules required by the Clean Water Act since 1972. These TMDLs are supposed to force a crack down on many unaddressed sources of pollution in watersheds that are seriously contaminated, since over 40% of the nation's rivers and lakes that have been assessed are not fishable or swimmable, according to EPA.
  - ⇒ States' Failure to Address Trans-Boundary Air Pollution Problems. Acid rain problems in the Northeast are due in large part to long-range transport of sulfur dioxide and nitrogen oxides—often from tall stacks at fossil fuel-fired power plants in the Midwestern U.S. Similarly, the "river of smog" problem is caused by long-range transport of air pollutants from heavily industrialized and urbanized areas, often to less populated down wind areas. These problems generally have not been voluntarily addressed by polluting states. Federal intervention has been necessary, and still is needed, to force states to deal with these classic "externalities" that they cause but that may not visibly affect them.
  - ⇒ States' Failure to Adequately Control Leaking Storage Tanks. Thousands of underground and above ground storage tanks storing petroleum or other hazardous materials were not adequately constructed or maintained to prevent leakage. This has lead to widespread groundwater and sometimes surface water contamination with petroleum products and other toxic chemicals. In addition, some above-ground storage tanks have suffered from catastrophic collapse (such as the collapse of an enormous Ashland Oil tank in Pennsylvania that contaminated drinking water sources for an estimated one million people in Pennsylvania, West Virginia, and Ohio, contaminating river ecosystems, killing wildlife, damaging private property, and adversely affecting businesses). Yet until Congress issued underground storage tank requirements in the 1984 amendments to the Resource Conservation and Recover Act (RCRA), most states had done little to address the underground tank problem, and above ground tank problems remain an issue.

V. CONCLUSIONS AND OPPORTUNITIES FOR COOPERATIVE FEDERALISM IN THE FUTURE.

Many observers suggest that there are opportunities to improve state-federal relations in the future. EPA and states have initiated a program in 1995 known as the National Environmental Performance Partnership System (NEPPS), which allows states more "flexibility" to implement federal laws.

While the concept of NEPPS is attractive in principle, it raises several significant issues. First and foremost among them is whether the states are able and willing to make this program work, and whether they will agree with EPA, through an open public process, to assure environmental protection by meaningfully tracking, measuring, and assuring adequate EPA oversight of progress in implementing the programs.

Academic observers have suggested that if this program goes awry—and there is a significant chance that without improvements it may—"we could lose substantial ground before the public or Congress realizes what is happening."[22] A former state and EPA enforcement official recently suggested in a law review article that many states lack the resources for such an approach, and that it NEPPS "could lead to a further decline in deterrence-based enforcement, given states' lack of interest in conducting such enforcement and ...other factors...."[23]

However, it is possible to streamline and improve state-federal relations in environmental programs, so long as the following key principles are observed:

The federal government should:

- Establish national goals;
- Set national health and environmental standards;
- Establish minimum procedural safeguards for citizen participation
- Approves state programs and maintain a backstop enforcement role;
- Periodically publicly review and make findings regarding state performance;
- Provide resources and technical and scientific assistance.

States should:

[22] Steinzor supra note 8, at 10079.
[23] Markell, supra note 2, at 64.

- Assume primary implementation and enforcement responsibility, where qualified;
- Meet national goals and standards;
- Show they have adequate resources and procedural safeguards to make the programs work;
- Develop innovative solutions to problems;
- Agree with EPA on performance tracking and documentation of successes or failures.

Within this context of shared responsibilities, there is much room for state innovation. EPA has recognized that it must, in appropriate cases, loosen the reins of federal oversight where a state can show that its is qualified and meets the criteria for flexible delegation. Such loosened reins cannot, however, mean that EPA gives up its oversight responsibility or waives basic legal requirements.

In conclusion, NRDC agrees that there is much room for improvement of state-federal relations. While state flexibility can and does work in some cases, it must be remembered that states must have the capability and willingness to make this work. States must agree with EPA upon specific measures to assure that the state is accountable for making the progress envisioned by federal laws, that enforcement and implementation of basic requirements will not be compromised, and that EPA and public oversight and participation are meaningful.

Mr. RYAN. Thank you, Mr. Olson.

Last, but not least, we have Mr. Recchia, the deputy commissioner of the Vermont Department of Environmental Conservation.

Mr. Recchia.

Mr. RECCHIA. Thank you, Chairman Ryan. Thank you very much for the opportunity to be here, Representative Kucinich and Representative Sanders. I appreciate the invitation and I am very pleased to be here.

As Commissioner Studders has pointed out, I am a cleanup hitter, so I get to say all the things that I don't think have been said yet. But, to be honest with you, I think most of the things have been said.

I think knowing my colleagues here and working with them on ECOS and on the Ozone Transport Commission and a variety of other groups that are trying to address State's interests and how we manage our environmental programs, I would say that we have much more agreement than we do disagreement.

That said, I think a couple of points really do need to be made from Vermont's standpoint and I wanted to give you that perspective.

In addition to being the deputy commissioner of Vermont's Department of Environmental Conservation, however, I am here representing also NESCAUM, which is the Northeast States for Coordinated Air Use Management. It sounds a lot better in acronym form than it does when you say the words.

That is New England, New York, New Jersey, basically trying to coordinate their air use management programs to achieve the best level of performance we can. We have been successful in moving forward on joint air issues through this organization.

Really, as we cross into the 21st century, I want to emphasize that we should be and we are celebrating, really, three decades of environmental awareness that has been founded in the recognition that there is an important Federal regulatory role to be played in protecting our health and the environment.

This has not always been an easy relationship. It is surely an understatement to say that the State and Federal relationship is certainly a complex one.

I guess in this discussion I would urge us to remember that innovative and flexible is not necessarily the antithesis of command and control.

They are not mutually exclusive. They can both work hand in hand and indeed, I think, although we have all struggled a little bit in trying to make it so, I think it has been working in that direction.

So, I would ask us to remember that as we enter this debate and focus on how to best improve the next decade of environmental management that we recognize that even in hindsight very few in government or in industry would make the claim that the past 30 years of success in environmental management would have happened in the absence of these Federal laws and standards. They indeed have made a difference and I think it is important to acknowledge that.

So, the debate really becomes improving our environmental regulatory system in the form of a pursuit to refine the role of the Federal Government and not replace Federal enforceable standards.

With those introductory remarks, let me quickly turn to some areas where we in Vermont have been doing innovative programs and have had some successes working both with NESCAUM and independently, and then briefly describe to you where I believe the right emphasis should be on the Federal role and the State role in managing environmental resources.

I will not go through in detail the examples that I have provided in written testimony. You will find them in a revised version in appendix A and B of the testimony that I am providing.

Let me briefly tell you about one or two in air areas and then I would like to focus on some water and mercury issues that Representative Sanders alluded to.

First of all, in terms of air issues, this is an example. The diesel regulation or control of large diesel engines has been a problem in the sense that we have been preempted by EPA, unintentionally, through the process of regulation and have required some creative work to figure out how to overcome that.

Working cooperatively with a variety of engine manufacturers, EPA, and the State regulators, we were able to get, throughout the New England/New York region, various innovative efforts in place to voluntarily upgrade those diesel engines, well in advance of EPA. You will find details of that in the back of my testimony.

In addition, we, too, have been working on what we call P4 pollution prevention in the permit process. I think Langdon Marsh recognized that and presented some of those examples in the context of the Oregon green permits program.

Really, for Vermont I want to focus on two areas which I think exemplifies where the Federal role can help and where it can hurt.

One is in protection of our watersheds and that was mentioned earlier as an option of where States can work. Certainly, even more so with air issues, the Federal Government can allow and support flexibility in the management of our State waters.

We have developed a watershed improvement project that builds on local citizenry taking charge and taking responsibility for their water resources and supporting those uses, not only for themselves, but to take stewardship of them for the rest of the members of the State and the community.

That is working very well. I piloted a program this year that is actually getting in the ground restoration work of rivers that have been damaged and degraded for the better part of 50 years.

Now, a mechanism exists already to be able to get the support of EPA necessary to support these types of programs. It was mentioned earlier that it is through our Performance Partnership Agreements. That is a mechanism by which the EPA can provide and should provide State flexibility for this type of work.

The final example shows where Federal programs are still necessary and warranted. We have been working in New England very, very hard to address mercury pollution and proper management of mercury-containing wastes to protect public health and our water resources.

Despite limited direct pollution sources, all of Vermont's waters are under fish advisories for consumption of certain fish species because of mercury contamination that comes from elsewhere.

Now, we will do our part and we are willing to do our part and to step up to the plate and do that. We have worked very hard both with the other New England States and the Eastern Canadian Provinces to achieve a regional goal of virtual elimination of emissions of mercury.

Nonetheless, all that work will be for naught if other States and areas do not step up to the plate as well.

Now, our program is serving as a model, not only on the national level, but internationally we keep on hearing of people who cite our program, which is a little bit scary, but somewhat rewarding.

I would just say that what that points out is that I think there are opportunities for States to design and implement innovative, cost-effective, and geographically relevant control strategies, but we can't do it all.

In short, I believe there are four main areas where the Federal Government still has an appropriate role and should continue to work. Three of these are what I will call substantive and one of them is financial.

The three substantive ones are: First, we must have the Federal Government setting minimum national standards of environmental performance. This does not mean providing a number of enforcement actions we ought to take. It is a true level of environmental performance we ought to be achieving.

Two, provide research and technical support to support technology development.

Three, we need their assistance and active participation in resolving interstate transport conflicts. As much as I enjoy working with all my colleagues from across the 50 States, it is difficult when we get 22 of us in a room to try and negotiate out how we are going to change the pattern of air polluting flow from West to East.

Last, I would say the financial point again reiterates the need to work through the Performance Partnership Agreements to provide adequate funding to the States for the work you wish us to accomplish and let us be flexible in making those resources available to accomplish that work through the Performance Partnership mechanism.

With that, I will stop. I thank you very much for your time and I look forward to answering any questions.

[The prepared statement of Mr. Recchia follows:]

Testimony of Christopher Recchia

Deputy Commissioner
of the
Department of Environmental Conservation
Agency of Natural Resources
State of Vermont

Before the

House Subcommittee
On
National Economic Growth, Natural Resources, and Regulatory Affairs

Hearing
On
"Lessons from the Laboratories of Democracy: Environmental Innovation in the States"

September 13, 2000

Washington, DC

Introduction

Thank you Mr. Chairman, members of the Subcommittee. My name is Christopher Recchia and I am the Deputy Commissioner Vermont Department of Environmental Conservation. I am pleased to be here today to speak to the respective state and federal roles encouraging innovative and effective environmental management. I am testifying before you today primarily as a state regulator, albeit one with significant experience as a former member of the regulated community. I am also representing the Northeast States for Coordinated Air Use Management (NESCAUM). NESCAUM is an association of state air pollution control agencies representing Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont. The Association provides a forum to coordinate regional air pollution issues in the Northeast by providing technical assistance and policy guidance to its member states. Accordingly, my comments reflect both a state and a regional perspective, and while I touch on other areas of regulatory innovation, I will rely heavily on air pollution examples to make my main points.

As we cross into the 21st century this year, we are celebrating over three decades of environmental awareness that has been founded in the recognition that there is an important federal regulatory role to be played in protecting our health and the environment. The National Environmental Policy Act (NEPA) of 1969 made the federal government accountable for its actions, even as the Clean Air Act of 1970 and Federal Water Pollution Control Act of 1972 made states and industries address their pollution issues directly. Specifically with regard to air pollution, earlier this year we celebrated the 30th anniversary of the passage of the Clean Air Act. Throughout this period, the nation has been actively pursuing the goal of clean-and healthful air. Much progress has been made. However, while we have made progress in controlling the most obvious sources of air pollution, we have learned of still more subtle but no less significant threats of air contaminants not only to the health of our environment, but to the health of our citizens. The same is true in our other resource areas. As we continue our commitment to clean air and a conserved environment, it is appropriate to reflect upon the tremendous achievements government and industry have made in reducing pollution and protecting public health and welfare.

The interlocking federal and state authority and obligations set forth in the 1970 Clean Air Act mark the modern era of environmental protection in our nation. The desire to provide all citizens with minimum standards of protection and to provide industry with consistent national obligations compelled Congress in 1970, and in every reauthorization since, to establish substantial federal oversight and enforcement of our nation's clean air strategy. At the same time, public health protection in our federal republic is appropriately vested within the obligations and police powers of state government. Through the creation of State Implementation Plans (SIPs), Congress recognized that states must bear the ultimate responsibility and represent the best hope to design and implement effective clean air laws. This model was repeated in other areas, and I believe it remains an appropriate one, properly balancing a basic tension between the desires for national consistency and state autonomy.

It is surely an understatement to say that the state and federal relationship in environmental management is a complex one. In this discussion, the subtle complexities of federalism are often described as a choice between "command and control" federal prescription and "innovative and flexible" state efforts. Let us remember as we enter this debate that even in hindsight very few in government or industry alike would make the claim that the past 30 years of success would have happened in the absence of these federal laws and standards; they have made a difference.

While the "Command and Control vs. Innovation" construct is rhetorically powerful, the polemic in this description suggests a false choice. I believe that a more productive discussion follows from the premise that national standards, while essential, often fail to capture and channel the ingenuity of local government and industry, or to bring out the best in either. Improving our environmental regulatory system should be a pursuit to refine the role of the federal government and not replace enforceable federal requirements.

It is important to note that striking the right balance has not been an easy matter for Congress either. Congress' appreciation of the need for clear and enforceable national clean air requirements is evidenced by the fact that, in every reauthorization since the first clean air public health statutes in the 1950's, Congress has consistently increased the Act's prescriptive national requirements and limited the discretion of both the EPA and the states. It is fruitful to reflect upon this history and take from it the strengths of each approach and the appropriate roles for each level of government as we begin to contemplate the amendments that will guide the fourth decade of our nation's pursuit of a sound and sustainable environment in general, and clean air in specific.

Innovative Efforts in the Northeast

Let me now transition from these introductory remarks to describe specific innovative efforts in the northeast states. These initiatives demonstrate that through creativity and collaboration, states, EPA, industry, businesses and citizens can identify mutual interests and opportunities that might otherwise be lost in the current regulatory system, and instead direct their energies toward real environmental improvement. The first area I'd like to draw your attention to is an exciting array of projects in the air arena to reduce pollution by retrofitting heavy-duty diesel equipment. The second initiative, also an air-related effort, is an innovative program that goes by the acronym "P4" which stands for Pollution Prevention in the Permitting Process. These efforts are both described in Appendix A to these comments, and so I will not go into great detail on them in these remarks.

The diesel work integrated voluntary collaboration into the federal and state regulatory regime to retrofit existing heavy-duty diesel vehicles. The essential wisdom of the P4 effort is that there is no better way to reduce air pollution than to never create it. In both projects, the northeast states have partnered with regional and national EPA offices and industry to achieve considerable successes. However, let me stress that these successes have not come easy and we are far from finished. While we have created effective

beachheads within EPA to launch these collaborative efforts, the EPA is a large institution with an array of corporate cultures. Suffice it to say that those offices charged with the obligation of enforcing the statute and EPA regulations are struggling, at times awkwardly, to maintain a coherent enforcement regime that rewards innovation.

I'd like to also briefly touch on two other initiatives that I believe highlight the ideal balance in the roles of state and federal governments: Vermont's Watershed Improvement Project, and the New England Governors/Eastern Canadian Premiers Mercury Action Plan efforts.

Protection of watersheds is at the center of Vermont's ability to establish and maintain clean water, and truly will determine whether we can sustain Vermont's way of life and its environment in the face of increasing development and population pressures. In an effort to integrate federal requirements for stream and watercourse improvements with our need to allow citizens to become educated and involved in the day-to-day protection of their local resources, our department established this past year its Watershed Improvement Project. The project is being piloted this year in one watershed that with state and federal funding and in-kind services is enabling real restoration of river channels and protection of recreational, agricultural and industrial uses of the river systems. More so than even with air issues, the federal government can allow and support flexibility in the management of our waters. A mechanism exists now with EPA to negotiate expectations and workplans in the form of our Performance Partnership Agreements. This is an example where EPA and the federal government can support innovation by resisting the temptation to provide financial and regulatory support for specific activities from Washington, and instead channel appropriate funds and support through these PPA's, where states can explain the work they intend to undertake and the results they expect to achieve.

Finally, New England has been working very hard to address mercury pollution and proper management of mercury wastes to protect our public health and water resources. Despite limited direct pollution sources, all of Vermont's waters, for example, have fish consumption advisories in effect due to the bioaccumulation of this toxic in certain fish species. Other states in New England, and indeed across the country, are in the same situation. We have actively been implementing a cooperative program across the region that makes the best use of regulatory controls as well as voluntary efforts, education, incentives, etc. to accomplish the regional goal of "virtual elimination" of anthropogenic (man-released) mercury. This program is serving as a model to others around not only the country, but the world. Nevertheless, success is at times a struggle as we in the region seek to establish performance standards that are truly more effectively initiated and enforced at the federal level. Specifically with respect to products containing mercury, it would be much more appropriate for the federal government to set the standard for mercury content notification and labeling for example, than it is for the individual states to try to do it. Nevertheless, in the absence of national initiative, the states must step up and do this work.

Examples of Appropriate Federal Role in Environmental Management

While states can design and implement innovative, cost-effective and geographically relevant control strategies; they can't do it all. In short, I believe there are four main areas where federal involvement and a continued active federal role is both necessary and appropriate if we are to effectively manage our resources and promote a sustainable, healthy environment across the country. Three of these areas are substantive: setting minimum national standards of environmental performance, providing research and technical support supporting technology development, and resolving interstate transport conflicts. The fourth is financial - providing adequate federal funding to the states for work you wish us to accomplish, but making the expenditure of those resources flexible for the states, which I believe can be easily accomplished through the existing Performance Partnership mechanisms. These roles are more fully explored, again using air as an example, in Appendix B to these comments.

Conclusion

As a nation we have been committed to the goal of a clean and healthful environment since the 1970's, with good success in many areas - and yet much more to be done. This commitment has been made both at the federal and state levels. The partnership is important for us as a nation to recognize, and is I believe critical for us attain and maintain a sustainable and healthy environment. As we review the innovative state programs to control pollution and manage our environment, we should share and advance the best of these ideas and carrying them forward among the states. At the same time we must be mindful of the important role the federal government has played and should continue to play in providing consistent, science-based standards and programs for public health and environmental protection, the necessity of this information for sound program development and implementation, and, to achieve fairness, equity and a nationally healthy economy and environment, the need for the federal government to continue to lead the way in ensuring comparable levels of environmental performance across the nation.

Thank you, Mr. Chairman and members of the Subcommittee, for your invitation to address you here today, and for your time and effort on this matter.

Respectfully submitted,

Christopher Recchia
Deputy Commissioner
Department of Environmental Conservation
State of Vermont

Appendix A

Example Innovative Air Programs in the NESCAUM Region

The Following are specifics of example innovation programs conducted in the NESCAUM states. The programs are in two programmatic areas, diesel engine controls and stationary source permitting.

Diesel Retrofits

Overview of the Diesel Pollution Problem

Diesel engine pollution is one of the prime concerns of air quality regulators in the U.S. The 10 million heavy duty diesel engines operating in the U.S. emit millions of tons of soot and ozone-forming pollutants annually. Heavy duty diesel emissions comprise 33% of total NOx (from all sources) and 80% of mobile source particulate pollution in the northeast states.[1] In addition, diesels contribute substantially to the nation's inventory of toxic pollution such as formaldehyde. The relative contribution from diesels to our nation's air pollution is rising annually. Several factors contribute to this trend of increasing heavy-duty diesel pollution. First, the use of diesel engines to power the nation's fleets of buses and trucks is becoming more pervasive due to the durability of these engines. Second, growth in annual truck miles traveled continues to increase steadily. Third, diesel engines pollute at a higher rate than do gasoline engines and thus replacing gasoline engines with diesels will cause continued increases in air pollution from mobile sources.[2]

Technologies Exist to Reduce Diesel Engine Emissions

The good news is that there are commercialized technologies to reduce diesel PM, NOx, and toxic pollution such as formaldehyde. New technologies used in the New York City bus fleet and in Europe have proven that diesel engine NOx and PM pollution can be reduced by 90 percent. The federal Urban Bus program (begun in 1993) has established the potential of rebuild/retrofit programs to significantly reduce emissions from heavy duty diesels. In 1993, the U.S. EPA began regulating engine retrofit/rebuilds in heavy duty urban buses in cities of over 750,000 population. The regulations require that newly overhauled transit bus engines meet more stringent particulate standards than required by the original engine certification. As part of this program, EPA has certified over ten products to reduce emissions from urban buses. Certified products have the potential to reduce particulate emissions by up to 80%.[3] Over 40 urban areas have benefitted from reduced urban bus emissions due to this program. Urban bus certified products can also

[1] "Heavy-Duty Engine Emissions in the Northeast" NESCAUM May, 1997. A similar trend is seen in the nation as a whole.

[2] A recent analysis prepared by the California Air Resources Board showed that diesel engines pollute significantly more than a gasoline engine on a normalized work basis.

[3] "Environmental Fact Sheet" U.S. Environmental Protection Agency, Office of Mobile Sources, March, 1997.

be retrofitted onto most existing truck engines. California and New Jersey have established guidelines and methodologies for implementing retrofit/rebuild programs in non-urban buses.

Diesel Standards Lag Behind Gasoline Engine Standards

While new technologies exist, diesel engine exhaust standards currently lag behind standards for gasoline engines by 10 years or more. The federal government must close this gap by adopting strict new engine standards for future diesel vehicles. Implementation of protective diesel emission standards is contingent upon dramatically reducing the level of sulfur in diesel fuel. Like lead, sulfur can poison many of the after-treatment emission control strategies that must be employed to reduce diesel pollution. We understand that EPA is on the verge of proposing regulations that will cap diesel sulfur levels at 15 ppm by 2007. Once enacted, this proposal and the resulting emission controls that it enables will dramatically improve public health across the nation. Ensuring the timely implementation of a 15 ppm sulfur cap on all diesel fuel is the most important single action Congress could undertake to promote innovative diesel reduction strategies.

Slow Diesel Fleet Turnover Requires a Control Program for Existing Engines

While there is good news in the potential for cleaner new diesel engines, the problem of the existing, highly polluting fleet of 10 million diesel vehicles must also be addressed. Diesel engines last as long as 25 years and travel more than a million miles in many applications. Older engines pollute at a much higher rate than new engines due to 1) engine deterioration and 2) less stringent emission levels in older model year engines. Thus, targeting emissions from older diesel engines is essential to reducing the pollution from the nation's diesel fleets in the near term.

Legal Barriers Prevent Traditional Regulatory Programs

Unfortunately, while cost-effective retrofit technologies exist to significantly reduce diesel emissions from existing engines, and while federal action has been taken to reduce emissions from a small subset of diesels, states are substantially pre-empted by the Clean Air Act from taking large steps to reduce pollution from existing diesel vehicles. Historically, states have been given authority under the Clean Air Act to regulate in-use engine emissions from mobile sources, but are largely pre-empted from adopting independent requirements affecting new vehicles.[4] However, a 1996 lawsuit brought by the Engine Manufacturers Association (EMA)[5] resulted in a change to the nonroad engine rule which preempts states from requiring the retrofit of in-use nonroad engines

[4] This preemption is moderated by the opportunity Congress provides states under § 177 of the Clean Air Act to adopt new vehicle standards that deviate from federal standards so long as they are identical to the standards adopted by the State of California.

[5] Engine Manufacturers Association v. EPA 88 F 3d 1075 (1996)

(such as those found in construction equipment) to control emissions.[6] Similarly, states face legal hurdles to the establishment of mandatory retrofit programs for highway vehicles. As an example, a state cannot pass a regulation requiring construction companies to install pollution control devices on construction equipment even though cost effective products are available. Similarly, a state cannot pass a law to require school buses to be retrofitted to reduce childrens' exposure to carcinogenic elements in diesel exhaust.

Collaborative Action to Overcome Regulatory Barriers

In the face of these legal barriers, Northeast state environmental staff has worked with the EPA, the Engine Manufacturers Association, the Manufacturers of Emission Controls Association, and many others to develop opportunities to integrate voluntary diesel-retrofit mechanisms into the existing regulatory regime. Through this collaborative effort we have encouraged the use of commercially available technologies by developing a standardized method for states to calculate State Implementation Plan ("SIP") credits for retrofit projects. To enable timely, cost-effective action and diminish administrative burden we have developed a third party verification system to review new technologies. Last we have developed a menu of recommendations on technology matches between retrofit equipment and heavy-duty engine applications.

EPA has provided an overarching forum for this collaborative effort by creating the Voluntary Measures Retrofit Program (VMEP). VMEP is a quintessential example of creating a space within the existing regulatory framework where innovation can flourish. The premise behind VMEP is to trust but verify. Through this program states are empowered to take credit for non-traditional measures to reduce mobile source pollution in their SIPs. Prior to VMEP, states often had to wait years for EPA to even consider new approaches before they could proceed with implementation. The VMEP pilot program inspires innovation by allowing states to credit innovative measures for a deminimis portion of a state's total SIP inventory so long as states commit to verify that these programs actually achieve their projected benefit in practice. As part of the VMEP retrofit program, EPA announced the establishment of a coalition to achieve the retrofit of 10,000 heavy-duty diesel vehicles within the next year. The program is also providing technical support to public agencies and state and local regulators that are implementing retrofit programs. Due in large part to this effort, a highly successful retrofit program has developed in the Northeast.

Specific Examples of Retrofit Projects

The specific examples that follow are each inspired to varying degrees by three main themes: 1) Compliance with regulatory requirements (SIP obligations, conformity requirements etc.); 2) Addressing community concerns over growth and new construction; and 3) The selfless desire to reduce air pollution.

[6] "Control of Air Pollution: Emission Standards for New Nonroad Compression-Ignition Engines at or Above 37 Kilowatts, Preemption of State Regulation for Nonroad Engine and Vehicle Standards, Amendments to Rules" December, 1997, 62 FR 67733

New York Urban Bus Retrofit Project

New York City has just attained the existing PM 10 standards and recognizes that further regulatory efforts will be necessary to address levels of fine particle pollution in the coming years. In light of the City's recent non-attainment status and the overwhelming evidence of fine particle health consequences, New York State is devoting considerable energy to reducing in-use diesel emissions. In 1999, the New York City Transit Authority along with the New York Department of Environmental Conservation, fuel producers, and retrofit technology developers established a program to retrofit 50 urban buses with continuously regenerating particulate traps. To date, 30 buses have been retrofitted and testing results show that PM pollution is reduced 90 percent in the retrofitted buses. Because of the success of the program, Governor Pataki recently announced a significant expansion of the program. Under this breakthrough agreement, the New York City Transit Authority (NYCTA) will purchase low sulfur fuel and traps for the entire fleet of 3,700 hundred buses. Through the VMEP program, New York State will now be able to take credit for this substantial achievement in future PM attainment plans.

Big Dig Retrofit Project

In Boston, over 100 pieces of construction equipment are being retrofitted as part of the "Big Dig" retrofit project. The multi-billion dollar Big Dig project has concentrated hundreds of pieces of construction equipment in the City of Boston, many of them operating next to apartment and office buildings and hospitals. The retrofit program was initiated when residents living adjacent to the Big Dig complained about diesel exhaust from construction equipment. NESCAUM worked with Massachusetts transportation and environmental officials to fund and implement -the retrofitting of nearly ¼ of the permanent diesel construction equipment on the project. The project has evolved to include a strictly voluntary component and a mandatory component. The voluntary retrofits are being undertaken and paid for by the highway department and contractors. There is also a contractual requirement stipulating that machines operating near hospitals, apartment and office buildings be retrofitted. Massachusetts is pursuing similar requirements in a host of major construction initiatives in the state. Here, the need to reconcile the needs of the community with the need to accommodate development in Boston spurred meaningful innovation.

Manchester Airport Retrofit Project

At the Manchester Airport in New Hampshire, airport operators, the New Hampshire Department of Environmental Services, and NESCAUM are collaborating in an effort to retrofit a majority of diesel ground service equipment. Like many airports, the Manchester airport is currently undergoing a major expansion in order to increase aircraft service and vehicle access for airport users. This expansion is likely to increase air pollution associated with airport operations. In part to offset this increase in emissions, the airport is moving ahead with a project to retrofit 60 airport owned nonroad vehicles such as de-icers and snow removal machines. The Manchester project is a combination of a program that aims to do environmental good combined with the need to comply with regulatory (conformity) requirements.

School Bus Retrofit Project

Another project under active consideration by Northeast air quality regulators is a school bus retrofit project. As part of the program, school districts in Northeast states will be encouraged to devote resources necessary to implement a varying array of diesel fuel quality improvements and emission control retrofits. In this case, the major impetus for the project will be to improve environmental quality and to reduce childrens' exposure to toxins.

Diesel Retrofit Conclusion

All told, we anticipate that up to 15,000 vehicles in the Northeast will be retrofitted in the first phase of this incentive driven initiative. As a result, thousands of tons of PM, hydrocarbon, and toxic emissions will be reduced in the Northeast. In all of these projects, a combination of regulatory requirements and voluntary measures have been combined to result in a highly successful program. Our model is presently being replicated in several cities in California and in Chicago. Based on the broad interest we have received from programs across the country, we are optimistic that similar retrofit efforts will be commonplace in the next several years.

Pollution Prevention in Permitting Programs (P4)

Overview of P4 Projects

Efforts to encourage pollution prevention within the existing regulatory structure reveal many of the barriers to innovation that I identified earlier. While the traditional federal/state regulatory regime has achieved great success, the traditional focus on technology based control strategies presents several shortcomings:

Overly prescriptive compliance approaches foster a focus on actions rather than results.

The focus on pollution control rather than pollution prevention discourages industry from investing in less toxic and more efficient technologies.

The emphasis on single media technology requirements tolerates the shifting of pollution from one media to another rather than eliminating it at the source.

EPA and the states have developed several innovative programs to address these shortcomings without jeopardizing the environmental gains that have been achieved through traditional regulatory efforts. One such program is the Pollution Prevention in Permitting Project (P4).

The logic of pollution prevention is unassailable. Rather than spending millions of dollars to manufacture, handle, and ultimately control the pollutant emissions of hazardous substances used in the creation of desirable goods and services, pollution

prevention enables the creation of these same goods using comparably benign methods. By changing manufacturing processes, many industries have determined that they can reduce air pollution considerably and cost-effectively. Under this approach, facilities are given maximum flexibility to operate their business while still maintaining adequate measures to ensure compliance with environmental regulations. Ultimately, these permits create a regulatory incentive to design waste out of the process and increase production efficiency.

P4 Permits

In 1995, Intel and the Oregon DEQ wrote the first P4 permit. This permit had two goals; (1) to increase operational flexibility at Intel's Aloha facility and (2) create a regulatory program that creates incentives for facilities to use pollution prevention to meet regulatory requirements. To meet these goals, the permit contained pre-approvals for specific operational and pollutant-specific, plant-wide emission caps. Speed and flexibility to expand the facility were key factors for Intel wishing to seek a P4 permit. As a result of the P4 permit, both the goals of flexibility and pollution prevention were realized. In the first two years of the P4 permit, VOC emissions per product unit fell 47 percent, while production increased 70 percent. In addition, the facility was reconfigured without re-opening their Title V permit. Finally, the use of pollution prevention to reduce per-unit emissions and to keep emissions under regulatory thresholds resulted in Intel saving two million dollars in avoided control costs. This innovative effort brought considerable benefit to the environment and the company.

NESCAUM P4 Pilot Project

Seeking to replicate this success in our region, NESCAUM has embarked on a multi-state effort to incorporate pollution prevention into the next generation of environmental permits. The basic tenet of our effort is to set stringent environmental outcomes while providing companies with optimum flexibility to design their compliance strategy. To date, EPA's efforts to support P4 initiatives nation-wide have resulted in several important achievements:

Development of six enforceable Title V permits that meet all substantive and procedural requirements;
Creation of permit terms which encourage pollution prevention to achieve compliance; and
Integration of "living" Title V permits which include flexibility conditions that support rapid, cost-effective operational change and creates lower administrative burdens for both sources and permitting authorities.

NESCAUM seeks to build upon these successes by leading an effort to fully integrate P4 approaches into traditional air permitting activities. Through this effort NESCAUM is working with our member states and EPA to identify and overcome regulatory barriers that stand in the way of integrating P4 into the traditional regulatory regime. In addition,

NESCAUM will be working in targeted sectors to develop flexible Title V permits. Targeted sector includes chemical manufacturing, semiconductor (chip manufacturing), pharmaceutical manufacturing, metals manufacturing (coating, anodizing), and pulp and paper operations.

Our focus on these target sectors is premised on the recognition that P4 is not equally appropriate in all sectors or for all companies. P4 permits require considerable effort and resources to develop. Therefore, we have opted to focus our energies on those sectors with the greatest need for flexibility in order to evolve with dynamic market demands. In addition, P4 permits should only be written for those specific facilities that have demonstrated and credible environmental management systems. Facilities with poor compliance records tend to have poor process controls. Establishing flexible permits with such facilities could render the public open to unacceptable risks. By the end of our two-year effort, NESCAUM expects to have identified a host of sources that are appropriate candidates for P4 and develop consistent approaches among our member states in crafting these permits.

Barriers to P4 Permits

A current barrier to promoting P4 permits is the overarching deadline for states to complete issuance of all Title V permits. Permitting agencies are under intense pressure to issue all their Title V permits by January 1. 2001. Permitting programs in the Northeast were among the last to receive interim approval and therefore have had the least time to write these permits. This situation puts the states at odds with P4. Working flexibility into permits requires significantly more time than writing a traditional permit. Given this pressure to issue permits, states are reluctant to devote significant resources to programs that will slow down the permit process.

Furthermore, barriers created in existing regulations and policies can often hamper innovative efforts. One such barrier is the "once in, always in" policy developed for MACT standards. Under Title III of the Clean Air Act, EPA regulates hazardous air pollutants or HAPs. Generally, these regulations require significant amounts of monitoring, record keeping, and reporting activities. The "once in always in" policy creates a perverse disincentive to reduce the use of hazardous substances because even the elimination of hazardous production materials does not alleviate the unique regulatory burdens that were explicitly designed for HAP sources. Given this situation, facilities have little inducement to investigate alternative technologies that are less polluting.

P4 Conclusion

The NESCAUM project has been underway for nearly six months. Work to date has found that many facilities and permitting agencies are eager to engage in this process. Critics within the government and environmental communities however, continue to express the anxiety that flexible programs, such as P4, do not provide adequate protections for the public. The result of these fears has been to hold P4 permits to a far

higher standard than that of traditional permitting activities. Our hope is that the scrutiny and transparency provided by our collaborative regional effort will help to overcome these fears and enable P4 permits to proceed efficiently.

Appendix B

Appropriate Federal Regulatory Roles in Environmental Management and Example Air Program Applications

Minimum National Standards

Air pollution control must be a national policy. Consistent minimum national standards and programs are needed to ensure the public health and provide 'level playing field' for regulated communities. Prior to the 1970 Clean Air Act, there was a patchwork of different standards, different programs and different requirements. These differences varied from irresponsible non-existence to very responsible programs. It did not ensure clean air for all. Industry was lured to location with lax or no requirements, a penalty against those who 'did the right thing'.

Technical Support/Technology Development

Our nation has been able to make progress in abating air pollution in part through the science and technologies that have been developed through the federal research and development programs. These include not only the studies which support the national health and environmental standards, but also, the science and methods necessary to conduct them. It includes the scientific understanding of atmospheric processes, measurement technology for emissions from sources and to assess the ambient condition, as well the actual technologies to prevent and abate air pollution at the source. And provides us models essential to the scientific understanding of the transport and fate of atmospheric pollutants and that essential in the operation of management permitting programs. Small states can not even consider such research program. The do not have the resources. A few large states may be able conduct some effort, but no states can provide the body of information necessary to understand and advance the science and technology of air pollution control. This is very much an appropriate and important federal role.

Interstate Transport

While states are able to implement appropriate and effective programs within their own jurisdictions, the issues of interstate transport remains outside their programmatic reach. Interstate transport of air pollution is a significant issue and one of ever increasing concern. Three examples of interstate air pollution transport are acid rain, photochemical smog (ozone) and deposition of airborne toxins.

Acid Rain

Acid rain has long been recognized as a problem. Here sulfur compounds are emitted high into the atmosphere in one jurisdiction and then travel thousands of kilometers before being deposited in another jurisdiction. During their travels, the emissions undergo

chemical transformations and then these chemicals are deposited in the local environment, causing havoc with the health of the forests, and the ecosystems of the lakes. How is an impacted state to deal with such a situation? Absent specific federal authorities, the courts would be the only venue for an adversely impacted state. In the matter of acid rain, Title IV of the 1990 Clean Air Act begins to address this very issue, however it does not go near far enough. The Act, while providing an innovative system to limit sulfur emissions, provides not environmental integrity test. Hence, while emission reductions are credited to the program, the environmental problem remains. A strong federal role in the abatement of acid rain is needed and an appropriate role for the federal government.

Photochemical Smog (Ozone)

Photochemical smog (ozone) is major air pollution health threat to our nation. Many major metropolitan areas of our country exceed the health based standard for this air pollutant. While progress has been made, there much more to do. And what needs to be done, needs to be done in a fundamentally different way. National policies to date have resulted in reduced ozone levels in our urban centers, but to some degree these reductions have come at the cost of increasing levels in the suburban and rural areas.

In my state of Vermont, this problem manifests itself in that Vermont, a rural state of less than 600,000 people, records peak levels of ozone some 80 to 90 percent of the health based standard. These level generally occur in the evening hours. To form ozone, strong sunlight is an essential ingredient. The classic ozone formation mechanism is for morning emissions of hydrocarbons and nitrogen oxides to mix in the warm summer's day sunlight to form ozone, with peak levels being reached in mid-afternoon. In Vermont's case that is what is happening to the west and south, then once formed the ozone travels to Vermont.

Again, there is an important role for the federal government in order to abate this interstate transport of air pollution. The 1990 Act provided an innovative mechanism for states to work together with the federal government on addressing the interstate transport of ozone. The Act provided for the creation of Ozone Transport Regions, and for these regions to be made up of the states for which transport is an issue.

This is model of state federal relations and has potential for continued and expanded use. Under the construct the Act, Ozone Transport Regions are comprised of the states for which the problems impacts, either as a 'contributor' or as a 'recipient' of the offending pollution. If the parties can reach agreement, in a timely and responsible manner, then that is the solution of choice. State Implementation Plans (SIPs) are modified and then implemented. However, if consent can not be reached among the parities, the federal government is authorized to either call for revisions to the state SIP or to develop a Federal Implementation Plan (FIP) in the extreme.

Persistent and Bio-accumulating Toxins (PBT)

The issue of persistent and bio-accumulating toxins is an emerging issue on the nation's environmental agenda. This is the issue in which we must come to gripes with the fact that pollution doesn't 'just go away'. There are a variety of recognized substances that once created and released into the environment, persist in the environment for very long periods of time and can build up in concentration (bio-accumulate) in certain organisms. These chemicals represent a very real and growing concern.

The concern is that these substances are not only toxic, but they remain active in the environment for long periods of time, allowing them to find their way higher and higher up the food chain.

At this point, the list of chemicals of concern is limited. It includes metals and organometals, the best known being mercury and mercury compounds, organochlorine pesticides, chlorobenzenes, dioxins and furans, PCBs, PAHs and a limited number of industrial and miscellaneous chemicals.

These are substances that not only find their way directly into the environment either from past or present uses. Some are substances that were used decades ago in the agricultural practices now abandoned or were in consumer products now long past their useful life and discarded. Others are unwanted by-product of industrial manufacturing or fuel consumption. Some of these contaminants may find their way directly to the environment through pipes or stacks. While yet others may volatize off the land or from where they were discarded and travel in the atmosphere. No matter how they enter the environment, they can travel long distances in the atmosphere and be deposited anywhere.

I would like to offer two examples of important national resources under threat by persistent and bio-accumulating toxins, Lake Champlain, and the Great Lakes.

Lake Champlain is wonderful lake that is bordered by New York to the west, Vermont to the east and Quebec, Canada to the north. It is characterized by a lack of industrial development and is a destination for many north country visitors and tourists. As remote and beautiful as the lake is, I must advise you that health advisories have been released by both the Vermont and New York Departments of Health on the consumption of certain fish. Levels of mercury contamination in these fish are of such a level that these governments have had to advise of the human health consumption may represent.

If the sources were with our jurisdiction we could and would eliminate it. But the sources are distant, beyond our jurisdiction, and therefore need action by the federal government on this serious problem.

The Great Lakes suffer from the ill effects of atmospheric of persistent and bio-accumulating toxins. Governments surrounding this national treasure have issued fish advisories. Using the example of dioxins, a recent study completed by the National Oceanic Atmospheric Administration (NOAA) identified that 90% of the dioxins entering Lake Superior where atmospheric in origin and that some sources of this dioxin were located over 1000 kilometers away.

Mr. RYAN. Thank you, Mr. Recchia.

That is the 10-minute bell, so I think what we will do is briefly recess. The three of us will go vote and then come back as fast as we can and then we will resume questioning.

So, the hearing will be recessed for 10 minutes.

[Recess.]

Mr. RYAN. The hearing will come back to order.

I am very fascinated with the whole race to the top versus race to the bottom issue. I would like to explore that.

But before I do so, I would like to ask some of the State officials about your particular problems in implementing your reforms and your programs vis-a-vis Federal regulations.

Ms. Studders, you talked about your Project XL and you talked about a law you have which is basically lying dormant because of the inflexibility of a supposedly flexible program.

Could you elaborate on specifically what Federal laws and regs have given you problems in exercising the discretion you need to benefit from Project XL? Is that a clear question?

Ms. STUDDERS. Yes, it is a clear question. I don't think I have the specific reg. I can tell you the language that is causing us trouble.

Mr. RYAN. Sure. See if you can just give me the nature of it.

Ms. STUDDERS. I apologize.

Mr. RYAN. That's OK. Explain the nature of the inflexibility.

Ms. STUDDERS. OK. I don't know the statute. There is terminology, and I am going to use quotes around this, called "superior environmental performance" that is in the Federal law.

When the initial explanation was in the Federal Register, we felt we had some creativity that we could work with based on the preamble in the Federal Register. Ultimately, when EPA interpreted those regulations, their interpretation was narrower than ours.

Literally, it is requiring companies to provide a guarantee if they try to do something that there will be "x" percent reduction of pollutants.

When you are out there on the front edge and doing something for the first time, it is very difficult to provide a guarantee.

That is my understanding of the issue.

Mr. RYAN. So, it is difficult to get the thing off the ground in the first place?

Ms. STUDDERS. Well, the guarantee piece. If you can't honor the guarantee, then EPA doesn't want you to go forward.

I can tell you that most States will have to get similar legislation in place in order to participate in something like this. But absent some tweaking at the Federal level, it is where the partnership is really critical, that both the Federal Government and the States together work on this one.

Mr. RYAN. OK. Thank you.

Mr. Seif, you mentioned the Federal liability problems with the brownfields. Specifically you mentioned that Federal Superfund liabilities are discouraging companies from participating in your State brownfield redevelopment programs.

What do the Pennsylvania business and community leaders tell you about this problem? Would eliminating or reducing the threat

of Federal enforcement at sites cleaned up to Pennsylvania standards significantly expand participation in your program?

What have been the roadblocks you have faced in trying to get these sites cleaned up?

Mr. SEIF. We are facing fewer as time goes on. I think earlier on when our program was new—it was signed into law in the summer of 1995—there was a great deal of concern that if you did everything we asked you to—and it was laid out clearly about what you should do and that was one of its advantages compared to Superfund—you still might look at Superfund as a threat.

If you don't have a finality to a business deal, you don't have a business deal. You can't bank on an uncertain time period or on a certain amount of money. Our statute provides that. The feeling was that the Federal Government could come in, or the regional office or Washington, and say, "It is not quite how we like it. Let us start over."

I think as time has gone on, and now upwards of 35 or 40 States have brownfields laws and you have an EPA alert to the harm it can do to an essentially functioning State program, there is more forbearance.

There are also more practitioners, whether they are legal or consultants or landowners or redevelopment authorities that are willing to go through the State process and have less fear of a potential Federal intervention.

It is still probably a good idea, however, to see some statutory reform of Superfund—if we can't get the whole thing reformed, which would be, of course, Tom Ridge's first choice—to at least provide some kind of safety, some kind of borderline between Federal and State jurisdiction in this area.

A great deal has been debated about what that language would be, but I would say the need for it is somewhat diminished over the years, but probably still important to have.

Mr. RYAN. OK.

Mr. Recchia, I wanted to examine something you said that I found interesting. In your testimony you noted that while cost-effective retrofit technologies exist that significantly reduced emissions under your diesel program, States are substantially preempted by the Clean Air Act from taking large steps to reduce pollution from existing diesel vehicles.

Do you regard this as an undesirable Federal intervention in State environmental prerogatives?

Also, do you believe that the better alternative system would be to have EPA set performance-based standards or goals and then allow the States to develop their own technologies, instead of EPA dictating which States may use technology to achieve these goals?

Mr. RECCHIA. Thanks. I would like to answer the second one first if I could, which is, yeah, I would agree with that. I think generally if EPA can establish scientifically based performance standards that we will do better in terms of being able to come up with innovative technologies to do this.

The difficulty there, and I don't have an easy answer for it, is that for EPA to justify a scientifically based standard there have to be technologies out there that they can point to demonstrate "This is achievable and feasible right now."

That makes it very difficult to not point to a particular technology and say, you know, we think that is "the best" and most straightforward control and at the same time not be forcing industry to use that technology because that is what the standard was based on and they are usually on a timeframe that needs to implement it quickly.

So, I don't know how you will address that concern. Generally, I think performance-based standards are a better way to go.

Going back to the first question on the diesel emissions, I think that was an unintended consequence. I don't see that as, you know, EPA going out of their way to try and mess around with States' prerogatives.

But I do think that between that and the engine manufacturers suing EPA, trying to get them to encompass a group of off-road diesel vehicles, which are basically all the construction equipment primarily responsible for a lot of the particulate emissions, into a rule that was meant to be dealing with on-road vehicles and successfully appealing that in court, that caused some of the tension there.

I would call it more unintended consequence, but nevertheless, the Federal Government, by intent or otherwise, was preempting the ability to effectively move forward.

Mr. RYAN. OK.

Mr. Olson, I would like to ask you about that same exact point. What is your take on a gradual transition to a regime where the Federal Government establishes environmental performance standards based on the best peer-reviewed science, and then allows States to design their own implementation strategies and hold States accountable for the results?

Here is what the best peer reviewed science say are the correct standards. You achieve the results. You employ and develop the technologies that work the best. What do you think about that approach?

Mr. OLSON. Well, I think it is actually the approach which is embraced in some Federal statutes. There are many examples, for example, parts of the Safe Drinking Water Act.

EPA adopts standards which say, "You do it however you want to do it, but you can allow no more than this level of a given contaminant in your drinking water."

There are technology-based standards under the Safe Drinking Water Act. They similarly say, "You do it however you want to do it, but however you do it, it has to be at least as good as this technology."

So, there are some examples where that has been tried, and it can work. In the Clean Air Act and the Clean Water Act there are also examples where EPA will set a basic performance standard, a new source standard, for example, and allow innovation to happen.

My concern would be that a wholesale transition to that approach without having thought through what the implications are. A broad re-writing all the statutes, I think, certainly could upset the apple cart and retroactively impair some of the progress we have made.

Mr. RYAN. I want to stick to the 5-minute rule so that everybody else gets a chance to ask their questions. We will do another round.

I will yield to Mr. Sanders.

Mr. SANDERS. Thank you very much, Mr. Chairman.

I think this is an interesting and important hearing. I think there should be very little disagreement that States should be learning from each other and that the Federal Government should be learning from the States.

The more ideas that are out there, the better it is. I think we need to improve our cooperation.

Let me start off with Mr. Recchia, if I might, with one question. Then, others please jump in. Do you believe that we need to end the Grandfather Clause in the 1970 Clean Air Act for fossil fuel power plants and if we did, what impact would this have on the Northeast, including the State of Vermont?

Mr. RECCHIA. I think that is a very critical area for Vermont. In particular, we are the only State in the region that is in compliance and in attainment for our ozone levels. But we are just barely in compliance and we are just barely meeting our particulate matter standards, through no fault of our own.

The issue here is, you know, we talk about the race to the top and the race to the bottom. The bottom line is, factually, these plants have been around for 30-some odd years, have been going forward and not putting on a level of control that the rest of us are putting on in our own region and yet we are the recipients of those emissions.

This is a perfect example where the Federal Government needs to establish the minimum performance level that is going to be necessary, the minimum limit of emissions that are going to be acceptable.

Mr. SANDERS. So, I am hearing you say that you think that we should eliminate that Grandfather Clause?

Mr. RECCHIA. Yes. I am sorry. I should have just answered the question, right? The answer is "Yes."

Mr. SANDERS. Are people in agreement with Mr. Recchia or is there disagreement?

Mr. SEIF. I would definitely like to agree with Mr. Recchia and point out that Pennsylvania was the first or among the first States to deregulate electricity.

So, we have the anomalous and economically unfair situation of having Pennsylvania power plants produce power with pollution under very tight controls, that is the Northeast Ozone Transport Region, and then facing competition from power plants producing them without such controls and sending the cheap electricity to compete with us and the even cheaper ozone to jack up our monitoring numbers.

What is wrong with this picture? The level playing field doesn't exist.

Mr. SANDERS. Do I hear any disagreement with the need to end the grandfather clause or are we all in agreement on that?

Ms. STUDDERS. Representative Sanders, Minnesota is in complete agreement. We have even gone so far as to send EPA a letter asking EPA to take action in this area. With all the work that is going on with electricity, this definitely is a national issue that we need help with.

Mr. SANDERS. OK. Thank you.

Let me ask another question if I might, a similar one. What are your feelings about the need to strengthen CAFE standards and put an end to the loophole for SUVs, minivans and pickup trucks? What is your view on that? Do you think we should strengthen CAFE standards?

Mr. MARSH. I am Langdon Marsh from Oregon. The States played a very strong role over the last couple of years in encouraging EPA to go as far as possible in eliminating the differentiation in emission controls between SUVs and other light trucks and cars.

EPA did adopt some very good regulations in 1999 to require for much cleaner cars starting in 2004 and also to establish lower sulfur in gasoline fuel standards starting in the same year. That was a major victory, I think, in terms of national standards.

I don't have any specific background myself on the CAFE standards, but I think it is that type of cooperation that is going to be necessary on a number of fronts, including off-road engines, both diesel and non-diesel and on issues like corporate average fuel efficiency. I think that issue could be moved forward.

Mr. HACKNEY. Congressman, may I jump in on that? In this respect, I am not speaking for NCSL, but as an individual legislator from North Carolina. I think that we need to take a larger view of both the questions that you have asked and move beyond that to ask what do we want our air to be like in 50 years or 40 years or 30 years? How do we want our rivers to look like then?

When I said in my testimony that we need to take the next step, what I meant was let's do some serious thinking about how we want the environment it to be.

In my State we are working really hard on air quality problems. But even though we are moving to low-sulfur gas and there is hope on the horizon for air quality because of all the improvements that the Congress has put into effect and that we have done locally as well, the vehicle miles traveled are going up so fast that it may not make any difference in helping out with our air quality.

So we need to take a long, serious look as we begin the 21st century as to what our air is going to be like in 25 or 50 years. We need to do some serious planning about that.

You have mentioned two specific areas which are very important. We need to move ahead.

Mr. SANDERS. You mean look at transportation as a whole?

Mr. HACKNEY. Yes.

Mr. SANDERS. Do I have time for one more question?

Mr. RYAN. Go ahead.

Mr. SANDERS. This question is a little bit outside of the scope of what we have been discussing, but it concerns me a great deal. It is a very serious problem in Vermont and I suspect in your States as well.

There seems to be an epidemic of asthma in this country. I know we have many kids from the State of Vermont who need inhalators and nurses have inhalators in schools.

Is there a serious problem in your States? What is your judgment as to the cause of the problem and what are your States attempting to do to address the epidemic of asthma?

Mr. SEIF. If I knew the cause of the asthma problem, of course, I would be investing in whatever company I sold that solution to. In terms of whether there is an increase or not——

Mr. SANDERS. Is there a serious problem in Pennsylvania?

Mr. SEIF. Of course.

Mr. SANDERS. A growing problem?

Mr. SEIF. Especially with younger people and other kinds of respiratory problems with other people who are at risk or indeed the general public.

The mix of indoor chemicals, the mix of unsafe buildings, buildings that aren't green, the kinds of activities that people are involved in. They are not as athletic as they used to be and sometimes there may be an issue there.

We are also hearing that there may be a rise of asthma vulnerability because of the extensive use of antibiotics in our medical history in the last 30 to 40 years, that is, a reduction of the amount of immune capacity in systems so that vulnerability to asthma is heightened.

It doesn't have anything to do with what is external in the air. It could be the same amount but a heightened vulnerability.

But we do have to have transportation controls. We do have to have a national fuel strategy and a national CAFE strategy. Whatever it is, it should be national. It is uniquely a national issue.

Mr. SANDERS. What about indoor air quality? You started off by talking about that.

Mr. SEIF. That is a very important issue.

Mr. SANDERS. Is that something Pennsylvania is doing much on?

Mr. SEIF. We have done a fair amount on it. We are building and have just cut a ribbon on a new green building. It is so environmental efficient that it sells power back to the grid.

Mr. SANDERS. Do you help schools?

Mr. SEIF. Yes, we do.

Mr. SANDERS. Do you provide funding for schools that want to clean up their ventilation and so forth?

Mr. SEIF. Yes, and we are building it into State bidding standards or standards for grants to school systems to make buildings green in energy efficiency.

Mr. SANDERS. For schools to get funding from the State they have to have certain types of standards; is that what you are saying?

Mr. SEIF. Or head in that direction. The fight is on.

Mr. SANDERS. I won't tell the chairman that.

Do you have other comments on asthma?

Mr. HACKNEY. Well, again, speaking individually and not for NCSL, in North Carolina I introduced the mobile air emissions bill. This last time we had hearings we had an emergency room physician from UNC Hospitals in Chapel Hill come in.

On the days when the ground level ozone levels were very high the very young and the very old show up at the emergency room. It is a serious problem.

So, the answer briefly is yes.

Mr. SANDERS. OK. Are there other thoughts on asthma?

Mr. RECCHIA. If I could tie it back to the diesel emission issue, that was one of the most frustrating parts about some of the diesel

issues because we were trying to work with the non-road vehicles in urban areas, Boston, for example, when they were doing the big dig.

In New York City, obviously, asthma issues are significant in an urban area like that, at least the reports are that they are increasing dramatically, even beyond what we are experiencing in Vermont.

So, you know, to be able to get cooperation to control those vehicles and get them retrofitted because, you know, they were going to be onsite for 2 or 3 years, was very important.

Ms. SCARLETT. Perhaps I could loop this back to the discussion of State innovations in general and make the following comment on the several questions you have asked, which have really been about whether we are clean enough, safe enough, healthy enough with our standards, and say that I think you have heard concurrence that, you know, environmentalism is a journey, not a destination.

We are not at that final destination and there are many unattended problems. But the issue is not just do we need grandfathering and do we need CAFE standards, do we need greater standards or changes emission control requirements?

It really does get back to, in any event, how does one do this?

On the grandfathering, for example, it is not just ought those facilities to be grandfathered, but the question is how is it that they are going to be enabled to achieve those goals and, for example, will they and other facilities who are already regulated still be faced with a source-by-source—for example, best available control technology—rule, which sometimes inhibits them from looking facility-wide at all their sources and optimizing their reduction across multiple emissions.

A case in point is in Florida, with an electric utility who had a non-BACT technology which would have reduced multiple emissions across the board, albeit for one of the emissions not quite as low as the BACT technology.

But the question is do we want this multiple ability to address all sources? Then on the SUV issue. I chair for the State of California the Inspection and Maintenance Review Commission, which oversees and evaluates that program.

One of the challenges we have is that the SIP process, the State Implementation Plan process, in a sense is kind of an up front and modeled exercise, that is a State develops a series of programs it is going to implement.

Attributed to those programs are certain kinds of modeled guesses at what reductions will be achieved, and EPA approves up front or does not approve up front, as the case may be, that plan.

So, some States don't get credit for programs that they want to implement which they think have a good chance of reducing emissions, California being the case in point with some ideas that it has on that front.

Then again to the asthma issue, as for example the State of Texas grapples in Houston, grapples with its problem. One of the challenges is that many of the remaining emissions, particularly the ozone forming emissions, are from small sources, dry cleaners, bakeries and so forth. This is what we grapple with in California.

The question is do you try the permit-driven approach with a kind of BACT technology, where you have to have this smoke stack scrubber approach, or do you try, for example, what Illinois has done with its Clean Break Amnesty Program, which is to say, "We know you as a dry cleaner don't have on your staff an environmental engineer. Let us help you understand the problems and solve them."

So, let us not separate the standard from the "how," which I think is a lot of what the State innovation discussion here is trying to get at.

Mr. SANDERS. Mr. Chairman, thank you very much for the extra time.

Mr. RYAN. I would like to get back to the whole idea of this race to the bottom, race to the top notion. I would like to engage Ms. Scarlett and Mr. Olson first and then the rest of the witnesses.

Ms. Scarlett, you wrote a study called "Race to the Top, the Innovative Face of State Environmental Management." I take it that you do not believe that the States, if allowed greater autonomy and discretion in setting environmental policy would engage in a race to the bottom. Could you explain why?

Similarly, what we have heard just from witnesses here today is that there are innovative, exciting programs out there in the States right now under the current kind of regime.

If these things are happening right now, where is the problem? Please address these two issues.

Ms. SCARLETT. OK, well, let me try to make it brief. I don't want to be Pollyannaish and suggest that there is never any challenge, that there aren't some ill-deed doers out there, whether it is an individual firm or a State itself that has made fewer investments in environmental protection than others. Certainly, that occurs.

But there are several reasons to think that we are more in an era of race to the top rather than race to the bottom. One is that most American citizens at this point, 85 percent, when asked, say "I am an environmentalist."

Remember that environmental laws don't spring from nowhere. They spring from constituent interest. That interest resides not simply at the Federal level but at the State level and fairly strongly.

Second, remember too, as several of the Congressmen pointed out, that State legislators are often closer to those constituents than one is often in Congress. So, when things are bad, I think that Jim Seif next to me will say that he hears about it. He hears about those environmental problems and fairly quickly, whether from environmental activists and/or from other members of the public.

So, that general psyche is out there. It is driving in the direction of race to the top.

Now, is this merely hypothetical? No. What we have tried to do is to document what is going on. You have programs like the Massachusetts Environmental Performance Program. They had a dry cleaner and a photo processor program. Through that program they achieved a 43 percent reduction in perchlorethylene emissions, 99 percent reduction in silver discharges.

You have the brownfields programs. You have heard several of the State innovators mention them, but in a very short number of years you had Pennsylvania cleaning up-how many sites is it now?

Mr. SEIF. 777.

Ms. SCARLETT. You had Illinois with over 500 brownfield sites cleaned up.

Mr. RYAN. You guys did better than——

Ms. SCARLETT. But this is actually what you have going on to some extent, a competition to do better. So, I think that observationally and empirically we see improvements.

Mr. RYAN. Right. It is great to see the competition among these brownfield programs.

Mr. Olson, I want to ask you because I was intrigued by something you said in your testimony. I can't remember the number you mentioned. I think you said 19 States adopted at least one statute prohibiting their State environmental regs from being any more stringent than existing Federal regs.

Mr. OLSON. Right.

Mr. RYAN. And that is to buttress your point that you believe a race to the bottom would occur if States were given more autonomy.

Isn't that kind of a one-sided point of view? I mean given what Ms. Scarlett just mentioned, also given the Council of State Governments' finding that 80 percent of the States have at least one clean air standard that exceeds the Federal minimum?

Isn't there more to the picture than just the fact that these 19 States have these regs out there?

Mr. OLSON. Sure there is. I guess what I would say is if you lifted all the Federal laws right now, environmental laws, and I know nobody is suggesting that, but if you did, I think as soon as the gun went off there would be a race in both directions. Some States would race forward and some States would race backward. It would probably depend on the program.

There are significant pressures to weaken standards, and I am sure the State representatives here would tell you that there are significant pressures. In some cases you have a major employer or a major industry who is threatening to move out of the State. There are many other reasons that there are pressures for States to go below the Federal standards.

I would be happy, for the record, to submit examples where States in fact are not currently living up to minimum Federal standards.

Mr. RYAN. Do you think that may be partly because of the prescribed technology they have to have or do you think they just won't do it because they want to attract the business?

I think it is going to be one of these issues where you probably have to go on a case-by-case basis. Lynn just gave us an example where companies had different technologies that would have worked better, but Federal law mandates BACT technologies that are inferior.

I think that is very complicated. It is tough to paint that one with a broad brush.

Representative Hackney, did you want to make a point?

Mr. HACKNEY. I want to say that I think the reason you hear so much unanimity today on keeping strong Federal environmental standards, is that the examples quoted by Ms. Scarlett and by Mr. Olson are substantially correct.

You can find, if you look, places where States have not done as much as they should. You can find, if you look, a lot of places where States have done wonderful things.

So, we take the position that policywise that States need the Federal backup, the Federal standard, but with the flexibility to do better and maybe do it in different ways.

Mr. RYAN. Yes. It sounds like a case is being made across the board for performance-based standards with autonomy and discretion to go find the best way to meet these standards, find the best technology to accomplish those goals.

If anybody disagrees with that, please speak up.

I wanted to ask you, Ms. Studders, a quick question. This is an interesting chart you showed us, your geographic breakdown. It is very intriguing that you decided to use a regional approach to configure your agency and controls instead of the silo approach.

Is that being done anywhere else and have any of your State counterparts consulted you on doing that? Have you run into any kind of Federal barriers in trying to implement this restructuring?

Ms. STUDDERS. I might be corrected by one of my peers who have more time than I. I think Wisconsin did a similar reorganization, slightly different, but geographically based. To my knowledge, we are the only two States that have done that, Congressman.

What is different about it or what we have found that is so successful is that we are at the source of the problem. I will be honest, the northern part of my State is mining and it is recreational lakes.

The skills of the scientists that I need in the north are very different than the skills I need dealing with feedlot operators in the southern part of the State of Minnesota.

In the Karst area, which is southern Minnesota, I know several other States here have the Karst dilemma, which is geology that allows pollution to move very rapidly without knowing where it is going to go. I need experts in the southern part of the State who can deal with that.

Where I can tell you that we have had some difficulty, and I will be honest on two fronts, the Federal Government and the entire environmental protection system that we are all speaking about today was created in reaction to crises. We created the Clean Air Act when we had air pollution problems; the Clean Water Act when we had a couple of rivers on fire.

The unfortunate part is that you can have staff working in a program in the air area and they don't talk to their counterpart in the water area. That is how you come up with these major enforcement dilemmas that hit the headlines of the paper and they say, "What is the environmental agency doing wrong?"

When you are arranged by those silos, as I literally refer to them, there is no reason for the air people and the water people to talk to one another, share their information, find out if they maybe have a problem company that they need to sit down and talk about.

With our new organization, my staff that are hydro-geologists, that are scientists, that are working in the air, water, the brownfields and the remediation area are on a team working on a facility. They are able to holistically look at that facility and prioritize what we need to do first to get that facility into compliance.

So, we are looking at the environment. We are not just looking at a permit regulatory requirement.

Mr. RYAN. That is fascinating.

Ms. STUDDERS. It is tough, though, when we are trying to interact with the Federal Government and other States. My comment to my staff is we have to make it hard on us and easy on everybody else.

Mr. RYAN. That is interesting. Go ahead.

Mr. SEIF. That is food for thought in that regard. EPA is also "siloed" and it does affect, in the same way as Karen has described, their overall stewardship of the environment and the Nation.

We also have a very heavily regionalized EPA. Richard Nixon thought in 1970, let us have these 10 standard Federal regions and all Federal agencies were supposed to go with that arrangement. Only EPA has stuck with it; everyone else has gone back to different arrangements—whether better or worse I don't know.

EPA is very heavily regionalized and that increases, I think, some institutional myopia in terms of dealing with programs. The very successful Chesapeake Bay Program, the Great Lakes Governors and others have organized around very natural boundaries called watersheds, the boundary that God made. That works a lot better.

We hope in Pennsylvania to go in that same direction.

Mr. RYAN. Mr. Marsh and then Mr. Recchia.

Mr. MARSH. Yes, I think just to supplement what my colleagues have said, many States have regional offices. I am not sure that they are specialized to the same extent as in Minnesota and Wisconsin.

But there is a movement, very definitely, to bring environmental agencies across the board out to work with local communities and watersheds, in neighborhoods in urban areas, to try to focus on holistic programs at the local level.

This is causing the need for significant cultural change within the State agencies. I think one of the difficulties or lags, if you will, is that the EPA in either the headquarters or the regional offices are not quite there yet.

I think one of the promises of the performance partnership process is to bring the Federal agency, EPA, in particular, down to the regional problem-solving level where I think most of the States are going.

I think a lot of the successes we are seeing in overall improvement in environmental results are at the watershed and regional air pollution levels.

So, I think one of the challenges for the next number of years is bringing all of the resources to bear to solve problems more comprehensively.

Mr. RYAN. Mr. Recchia and then Ms. Studders.

Mr. RECCHIA. Thank you, Mr. Chairman. I would actually like to go back to an earlier topic if I could and just touch briefly on the race to the bottom issue again. I generally agree with Lynn that we are moving in the other direction, in general.

But I think there is a potential with deregulation to go the other way. I would offer you a thought about how to maybe correct for that, using, if you will, market forces and the constituents that Lynn had mentioned.

You know, generally, the public is interested in holding people accountable for good environmental performance. That is a wonderful asset in Vermont and I have no reason to believe it is not true around the country.

What that means is the constituents need to know what the environmental performance of those groups are. In other words, there has to be some sort of environmental performance measure or standard index or indices, if you will, of how, if I am producing power in Vermont from a hydroelectric dam, how that equates environmentally to someone producing power out in a Midwestern State from a coal-fired power plant.

So, these constituents need to be able to see that. I guess I would offer the same issue on the mercury front. You know, part of the frustration from the region's standpoint is we feel like we are doing a part that the Federal Government should be doing in the form of dealing with consumer awareness of mercury in products and package labeling and things like that really, ideally, would be done on a Federal level.

That is the kind of partnership that I think works well. I could explain to you all the great things we are doing on mercury control in our State from the regulatory to the voluntary, but on these broader issues, and particularly on air issues, as you will see, we need more national presence and consistency to help level the playing field.

Mr. RYAN. Ms. Studders.

Ms. STUDDERS. Thank you. I wanted to supplement the question you had asked in light of what some of my peers here had said to you in responses.

We have a contract between the Minnesota Pollution Control Agency and EPA, the Environmental Performance Partnership Agreement. It is a 2-year contract. Not all States have it. I apologize, I do not know the number of States that have that contract. I think it is around 30, but I am guessing at that number.

In that we set up expectations of what the State is going to do and what the Federal Government is going to do.

To supplement what Secretary Seif said, one of our dilemmas is, we can negotiate that in good faith with EPA and the staff that do the agreement can come to agreement with our staff. When we run into barriers is when it goes into the EPA structure, into the different silos, into the air program, the water program, and the land program.

They have specific measurements they want in that contract. They aren't environmental measurements. They are the old style measurements that I spoke about. That is where one of my messages on flexibility is. We have to start looking at that whole body

of water, that whole air shed. We have to because just that one indicator doesn't tell us if we are doing our job well.

Mr. SEIF. There is an even worse silo at EPA than the media—air, water and so on. It is more like a black hole. It is enforcement. OECA pollutes other portions of the agency that have great ideas, great ideas for flexibility, innovative and so on. You can always count on an OECA lawyer or a DOJ lawyer to say, "Oh, we can't do it that way because in 1982 we did it a certain way."

I believe the EPA is actually the conservative among the players you see simply because the culture of the agency is that way. It was effective, it was exactly how you would want them to be in 1975. You don't want them to be that way in the coming 10 years.

Mr. RYAN. That is interesting.

Ms. Scarlett.

Ms. SCARLETT. I would like to just kind of loop this together in the barrier issue, and then make what I think is perhaps a constructive suggestion.

One of the things that Minnesota faced, and other States faced, as they have tried to move to a more holistic and regional approach, is a lack of clarity between the relationship of the old silo-by-silo permits and the new facility-wide or industry-wide or holistic permits that Minnesota and others are exploring.

It is a lack of clarity, not a slam-dunk. Obviously, some States have managed to move forward with these endeavors.

But a Federal or congressional authorization that made that somehow clear, I think, would be something worth examining and exploring.

Second, and also related, there is a mismatch between the reporting requirements, the permit-by-permit reporting requirements, and the more holistic environmental performance indicators that Florida, Oregon, New Hampshire and others are moving toward.

So, if there were a way, again, to reorient the Federal focus on performance indicators that mesh with these new directions, I think that would be fruitful.

Now, one constructive thought on thinking about the race to the bottom and the race to the top and how does one grapple with the fact that both are obviously possible, and that is to take again a page from the States, the Green Tier Permitting Program in Oregon and also that in Wisconsin, which actually has tiered permits.

One could take, for example, the current NEPPS agreement and develop a congressional kind of authorization whereby those States that have NEPPS agreements and have these compacts that have performance requirements in them are then essentially fully responsible for permitting an enforcement and only held to the test periodically on "are you achieving real results?"

Those States that either do not want the delegated authority, do not have a NEPPS agreement for whatever reason, could still remain in the old environmental regulatory regime.

This allows us to move forward without jettisoning the past, if you will. So, it is something to think about.

Mr. RYAN. Sure. That is a very provocative way of putting it.

Mr. Sanders.

Mr. SANDERS. Thank you very much, Mr. Chairman.

I just have two questions. I don't think there is any disagreement that there are some areas where the local and State government are better equipped to move and there are some areas where the Federal Government must play a very important role.

You mentioned the word "dry cleaning." I remember in Williamstown 20 years ago, a small town in the State of Vermont, we had a problem. The water was severely polluted. The State of Vermont could handle that. I don't think we don't need the Federal Government.

On the other hand, it is reported that the hole in the ozone layer is now three times the size of the United States. There are, I guess, credible suggestions that causes skin cancer around the world.

The State of Pennsylvania is not going to solve that problem, nor even will the great State of Vermont all by itself. Here is where you have a problem.

Does anyone disagree that on areas like that the U.S. Government, along with the rest of the world, is going to have to play a very, very active role? That is my question.

Ms. STUDDERS. Congressman Sanders, from my perspective, in Minnesota we share a boundary with Canada. I don't just deal with State environmental issues. I am dealing with international environmental issues.

Mr. SANDERS. That is right.

Ms. STUDDERS. The environment is global. The water is all connected. I learned a statistic when I got this job that I will share with you because it shocked me.

We know how China pollutes. The 10 most polluting cities in the world, air-pollution-wise, are in China.

Mr. SANDERS. That is right.

Ms. STUDDERS. The air, to get from China to Seattle, takes 4 days. It takes 1 more day to get it to Minnesota. So, we have to start thinking about the question that you asked earlier about what do we want our air and water to look like in the future. This is a global issue.

Mr. SANDERS. That is right. But you have no argument with the statement that this is not going to be solved at the statewide level. It is going to be a national and international solution.

Mr. SEIF. I think there is another spectrum along which we must think globally, that is geographic as has just been mentioned. But what goes up a stack is a soup of stuff. It is mercury, let's say. Here I go, I can see Marlo Lewis getting ready.

That fact is, to be inflexibly against the regulation of CO2, in a power plant stack, while urging innovation and the like in the control of other kinds of pollutants, say mercury, is not quite realistic. It is not how power gets generated. It is not how planning gets done. It is not good engineering.

It may be that there is a good legal case, I believe there is, that EPA doesn't have statutory authority concerning CO2. But if EPA is to be managed or overseen by the Congress in a flexible way, just as we would like it to oversee us in a flexible way, it ought to be able to work with us, with the Ozone Transport Commission, with individual States, with power plants, with power companies, with other nations, to work on all pollutants.

It should work to develop technology, techniques, treaties—though I don't favor the one now before the Senate—and other devises without having its hands sort of tied because someone just doesn't agree with a particular step it may have taken, or with its sometimes "lead with the chin" approach about the way it operates.

The fact is flexibility is important from the Congress as well as from EPA to the States.

Mr. SANDERS. But having said that, you would not deny for a second that the Federal Government, in fact the international community has got to be actively involved in addressing this crisis situation?

Mr. SEIF. Actively and unfettered by particular agendas against particular actions that they might, or ought to, consider or at least research or think about.

Mr. SANDERS. Let me ask another question, my last question, if I might. I am curious. I don't know what the answer to this one will be.

I think that around the country, although not in the U.S. Congress, I should say, there is growing concern about genetically modified organisms, the issue of labeling, the issue of long-term possible health effects is something that is-I will give you one example.

There are some companies that are making new fish. I guess they have created a new salmon, which is two or three times larger than the old salmon we used to have. The threat is if that escapes into the waterways it could wipe out the specie that we know today as salmon.

It is actually among ordinary people an issue to the degree that they know about it in Europe and there is a great deal of concern about this issue.

Is that an issue that is on the agenda of any Statewide environmental agency?

Chris.

Mr. RECCHIA. Yes, I would like to respond to that because I probably feel more passionately about this than I ought to because it is sort of beyond the scope of my normal profession, but I will say it is very related to the mercury labeling thing I was just mentioning in the sense that I think that if you want to enlist people of ability to vote with their feet, if you will, or vote with their dollar or do any of that, they must be informed about this.

It doesn't mean we have to have all the answers and know necessarily whether it is good, bad or indifferent. The fact that it is different and people have the ability to make their own judgments about it as time goes on, I think, is very, very important.

I think it is very important for mercury-containing products, fluorescent light bulbs. If there is no alternative, fine, put the mercury in. But tell people that it is in there. They can judge whether that is good for them or not.

Mr. SANDERS. You are suggesting labeling of genetically altered products?

Mr. RECCHIA. Genetically altered foods, I would say the same thing. I don't think any of us, at least no one in my profession I know of would sit here and say "We know all the answers to envi-

ronmental problems. So, you don't really need to know that, ladies and gentlemen, because we will take care of it for you."

I think that is very patronizing and presumptuous and I think that we ought to simply inform people of the range of things they are "concerning."

Mr. SANDERS. Are you supporting Federal legislation or State legislation?

Mr. RECCHIA. On this type of thing I would support Federal legislation for the same reason I would support Federal labeling of mercury-containing products, etc.

Mr. SANDERS. Yes, Ms. Studders, go ahead.

Ms. STUDDERS. If I could do a friendly amendment to what Vermont is suggesting. In Minnesota, we have an organization called the Environmental Quality Board. It is comprised of 10 agencies in the State and five citizens.

Our job is to oversee environmental policy, particularly where it crosses into different agencies.

I am going to give you an example of your question with GMOs. There are health departments in the United States that have some jurisdiction over that. There are agricultural departments that have jurisdiction over that. There are departments of natural resources or U.S. Fish and Wildlife that have jurisdiction, as well as the Environmental Protection Agency.

You have hit on a perfectly good example of why the old system isn't working for us. Our environmental problems today are crossing geography. They are crossing science. They are crossing different disciplines.

I don't think you can say one agency has to do this. We need teams now. The genetically engineered organisms, I mean the impact is phenomenal, but I don't think one agency with its expertise can solve that.

To the extent we can encourage that at the Federal level and not just give it to one agency, I really think that diversity is needed on issues like that.

Mr. SANDERS. That is a good point. Are there any other thoughts on GMOs?

Mr. MARSH. I would just like to say that I would completely agree with the gentlemen from Vermont's suggestion that some kind of Federal legislation requiring labeling for genetically modified organisms in food would certainly make some sense, so people would know and they could make their own decisions.

Mr. SANDERS. Some of us are trying to accomplish that. Thank you.

Mr. Chairman, thanks very much.

Mr. RYAN. No problem.

Let me just wrap up and ask a basic question of all panelists.

Ms. Scarlett, you mentioned three legislative remedies that you thought might help promote State environmental innovation: amend existing environmental laws by including flexibility provisions, develop an EPA authorizing statute specifying congressional support for State environmental innovations, and develop a statute allocating resources to States based on their achievement of performance goals.

In that context, I would like to ask everybody a question what do you think Congress ought to do?

The purpose of having you here is to have you advise us. What do you think Congress ought to do to facilitate your ability to improve the health and welfare and environments of your respective States? What kinds of flexibility? What kind of things do you think we ought to focus on doing here?

I will just start from left and go right. How does that sound?

Mr. RECCHIA. It sounds not as good as starting from right and going to left.

Mr. RYAN. It is your right and their left. OK.

Mr. RECCHIA. But I will. I guess I think that I would agree with Secretary Seif. The weird part of the Federal administrative agency right now in terms of the level of cooperation and moving forward in a cooperative way is the Office of Enforcement and Compliance Assistance [OECA]. So, I would urge you to do something there.

I think the other thing you could do, because I believe EPA wants to do the right thing and support us in these areas, is build in the flexibility for EPA to establish standards that are based on scientifically sound information that form the basis of health or environmental performance levels that we need to get to, but where there may not be technology out there to achieve those standards, and allow flexibility for people to see if they can innovatively get to that point.

I think right now they are so hounded on both sides that they don't have any room and flexibility to move. I would also agree with Jim's comment about, you know, no one should be muzzled in doing the environmental work of this Nation and I would urge us to not have that type of reaction when we disagree.

Mr. RYAN. OK. Thank you.

Mr. MARSH. Mr. Chairman, I think that in addition to promoting and permitting flexibility by EPA such as they have done through the regulatory innovation agreement with the States, and I think there may be something that can be done to buttress that flexibility, I think that the resources are probably the major limiting factor for both the EPA and the States to be as flexible as they need to be.

I think the business community in our State does recognize that if permits are going to be flexibly administered, you need to have the people there available to do it.

Now, it is not all a Federal responsibility, to be sure, but I think that looking at the capacity of both the States and the EPA, through its regions, to work cooperatively and flexibly, there is an element of a resource question there that I think that Congress can address through its budget process.

Mr. Chairman, I am going to apologize, but if I am going to get back to Oregon tonight, I have to leave right now.

Mr. RYAN. Please go ahead, by all means. Thank you for coming.

Mr. MARSH. Thank you very much for inviting me.

Mr. RYAN. Mr. Walden sends his regards. He was stuck in another committee, but he wanted to come.

Mr. MARSH. Thank you.

Mr. OLSON. I would make three points in response to your question. First of all, the Federal Government can and should be pro-

viding funding to States and to EPA's programs that are trying to encourage innovation at the State level.

I think that is one of the most important things that the Federal Government can contribute.

Second, it is very important to try to identify better measurements of performance. I don't know if you have looked through the GPRA reviews that EPA does or the so-called Government Performance and Responsibility Act. But many of those, frankly, identify things like the number of permits issued, which are important, but is that really what we are after?

Perhaps what we ought to be focusing on is ways to identify actual environmental improvements and making those achievable through some kind of enforceable requirements.

I do want to just highlight why OECA, which has been sort of whipped today, and other parts of the agency sometimes put the brakes on the flexibility that has been suggested. I don't know all the examples that may have been cited here, but certainly one person's flexibility can be another person's gutting of a requirement.

The concern often is will this requirement be enforceable. Very often some of the proposed flexibility, which sounds good, can end up becoming almost unenforceable. You know, if you give a lot of flexibility to a Midwestern power plant that is belching a lot of pollution, is that going to end up being so much flexibility that you can have no enforceable requirements and it will end up polluting the northeast, Vermont and everywhere else? So, you know, that is obviously one issue that comes up frequently.

Ms. EDGAR. Florida would echo the comments of our sister States and colleagues regarding some of the difficulties that we have had trying to bring what we considered to be good ideas and innovative ideas and being stalled by OECA.

We also would look for some ability to devote financial resources to problems that are identified, to priority problems rather than stovepipe distribution of funding sources.

To follow on a comment by Ms. Scarlett earlier, many of the Federal requirements require States to collect reams of data on outputs that really are of marginal use in analyzing and understanding the outcomes of our environmental programs.

So, I think direction from the Federal level, from Congress, from EPA to work with the States and help us with our data integration, help us with data quality, data standardization.

As an environmental agency, data is what we deal in, data and science. In many instances we are dealing with incomplete data to help us do true assessment, but yet we are required to continue to report and to report and to report.

So, again, we need some direction to help us standardize and be able to have indicators that help us with meaningful outcomes.

Mr. RYAN. Thank you.

Ms. STUDDERS. Minnesota thanks you for this opportunity. I am going to give you seven suggestions that I really need. Some of them are echoed by my peers and in others I am trying to pull together a lot of what we said today.

The first is we need statutory flexibility. What I would actually suggest is that you might want to think about a task force or a

work group to sit down and talk about what specifically would be needed in that arena to help us with innovations at the State level.

I think one of the things you need to understand is our existing environmental statutes do not allow us to function risk-free. When you are experimenting you need to have a safety net that you can function in. We need that.

The second thing we have already touched on within OECA. I don't want to beat up OECA, but let me draw an analogy. Today, when I ask people, when something happens and they want to take an enforcement action, the first question I ask them is: "What was the impact on the environment? What was harmed? What was hurt? What was lost? How serious is it? Is it irreversible? How long will it take to recover?"

That, to me, is a very vital question. When I am having a fight with OECA that is not even on the table. The concern I have is—again, it is not against them; it is the system they were set up to enforce that is 30 years old.

Mr. RYAN. What is it? Is it process questions?

Ms. STUDDERS. Well, that inspection found this widget out of whack or this piece of paper not there or this many emissions too large and did not look at what was the impact to the environment. I could take a simpler example and it would go back to where we have had our dilemmas with Project XL in Minnesota.

One of our examples was a major corporation in our State wanted to go forward early on with Project XL. Part of the reason they actually backed out and why we backed out of the project was because the Federal system was not able to give them credit for changes they had already made that were above and beyond regulatory and that had been done before the passage of a law.

It is just literally the nitpicking of "has there been something already done above?" We don't get credit for what we have already done. So, if we are innovative and then a law gets passed down the road, there is no credit for that.

Actually businesses that choose to be environmental leaders are being penalized under this existing system by OECA. That is what is problematic about it.

The third thing has to do with funding flexibility. Not only do we need more money, but also we need money that we can move around to where the biggest environmental threat is. Right now there are so many strings attached to the money, it is very difficult for us to do.

The fourth has to do with communication. That is one of my strong messages as Commissioner. There needs to be a better dialog between EPA and the State environmental agency. There also needs to be a better dialog, as Secretary Seif said, between the regions and headquarters of EPA. Often the right hand does not know what the left hand is doing. We at the States get to deal with both entities. That is tough sometimes when HQ says one thing and your region says another.

Then you add the complication of the media—air, water and land—within the agency. That communication between the silos has to start happening.

The fifth is that I would like to challenge that we need to do environmental regulation based on incentives as opposed to punish-

ments. Let us think about it. Most of us in this room are parents or we have a niece or a nephew or a sibling who is younger than us.

We think about what causes someone to change their behavior. It is not getting yelled at. It is not getting beat up. It is getting some positive reinforcement to do a behavior change.

I would like to think that is the "second wave of environmental protection" we have to put out there, especially when we are going to start dealing with nonpoint source pollution.

The sixth thing has already been touched on. EPA needs to look at how it is structurally organized. It worked. It is not working now. We need to look at the media issue. We need to look at the regions issue. I would like to challenge that we may need to take it apart.

The final and the seventh one is data integration. I know there is an issue that is before Congress now. I believe it is a $30 million appropriation in EPA's budget. It is for data integration with the States.

Let me tell you how complicated it is right now. Fifty of us have computer systems. Fifty of us keep the data differently. EPA keeps the data differently. We don't put the decimal in the same place. The data can't talk to the data. We are spending millions of dollars, probably billions nationally, on this data. And it is kind of useless right now.

We have to standardize the system. That is an example where the Federal Government needs to help. But the Federal Government can't design that system without having the States at the table. We have to be there to tell you what our computers can and can't do.

Do you know what? With this thing called the Internet we can put that data on the Web and then citizens can start making decisions to help us with the air, water and land because they will see it. It will all be reported the same way and we can be a better informed country. So, my last one has to do with data.

Thank you.

Mr. RYAN. Thank you.

Mr. SEIF. Everything that Karen Studders said is absolutely on target and especially, I think, the last one. Unless we start counting the right stuff and try to break down what reinforces the counting of the wrong stuff, which is bureaucratic culture, including mine.

While I am here today giving advice on how other people should do stuff, my bureaucrats have done some very dumb things today. I don't know what they are. But I will find out tomorrow.

That is because they are pursuing, under statutes or under EPA grant direction, or because of the silos that they have grown up in over 30 years in the agency, or because of external enforcement by environmental groups saying, "If you are not putting people in jail, you are not doing the job."

Whatever it is, we have to change what the goals are. Then the same bureaucratic behavior that we decry and love to bash and get headlines about will in fact serve the environment, if we can get them to count the right stuff. That is the key.

I think Congress, frankly, could reorganize itself in terms of the committee system to give EPA—well, you asked!

Mr. RYAN. Yes, I know. Let us have it.

Mr. SEIF [continuing]. To give EPA a much better chance of being responsible and responsive rather than perpetually jerked around in terms of what their goals are and in terms of what the oversight objectives are.

A good place to begin, as Karen mentioned, would be the budget. But that is only after you handle the data systems, and in particular, please cough up that $30 million so EPA, which has the right approach in mind and has lots of State buy-in——

Mr. RYAN. Is that in the VA-HUD bill? Does anybody know?

Ms. STUDDERS. Yes. It is in their budget.

Mr. RYAN. Is it in VA-HUD right now?

Ms. STUDDERS. I know it is in their budget.

Mr. SEIF. I don't know where it is. I am told it is in the Senate.

You know, if the only tool you have is a hammer, every problem looks like a nail. OECA is a hammer. There are lots of other tools. If we could just incentivize and fairly count their use, it would make a world of difference.

Mr. RYAN. Thank you.

Ms. SCARLETT. Well, Congressman Ryan, I have already mentioned a few, but let me just briefly repeat them. I do think it is worth considering an authorizing statute for EPA that would provide a vehicle to actually include clarification of the respective permitting authority between the States and the Federal Government.

As I suggested, this doesn't need to be either/or. One could perhaps use a NEPPS style agreement as the mechanism to make that happen so that some States would still be under the old regime and some would enter the new.

Second, I do think that one needs to think about a reorientation, perhaps, of resources toward data integration and development of performance indicators. It could be either resources to the States as they begin to work on those performance indicators.

I find it ironic that we have been 30 years into our environmental regulation with so much emphasis on permits and process that we have actually unattended to those indicators and their development.

Third, and relatedly, I think funding flexibility, we now do have some block grants that go to the States, but they tend to be silo by silo. So, again, there is not the opportunity for a State that has a water problem to use those resources for water. Instead they must use it for air, which might not, for example, be their primary problem.

Then finally, and perhaps more controversial than any of those three, I do think there is a need to reorient—I don't know how this can happen. This is much more complex. I think there is a need to reorient Federal resources toward ongoing monitoring and actual performance—kind of "the proof of the pudding is in the tasting; how did we actually do" rather than up front second-guessing of program design.

I think the SIP process is a classic example of that up front kind of preemption and second guessing rather than letting States say, "This is what we want to do."

Sign a compact, if you will, a Netherlands style compact. "This is what we are going to do."

Hold us to the test in 2, 3 or 4 years and if we don't succeed at that point, let us go back to the drawing board.

But that up front process actually does keep off the table some very good innovative programs that otherwise might yield performance.

Mr. HACKNEY. Mr. Chairman and members of the subcommittee, thank you for this opportunity. I want to start out by advocating something that you have just done, that we have advocated in our testimony, to establish a better and a more formal communication process between the State legislatures and the Congress.

You have certainly started that today. I want to reiterate that. I do think it is a two-way communication process. I think it should be more formal. I think EPA should be intimately involved with it as well.

Second, avoid mandates and preemption.

Third, send money.

Mr. SANDERS. And cut taxes?

Mr. HACKNEY. In particular I want to mention send university research money. I think those are some of the best environmental dollars that we spend.

I mentioned earlier in my testimony that we have a hog lagoon problem in my State caused by the immense expansion of the hog industry.

We have a lot of important cutting edge research going on at North Carolina State University and we are trying to learn what does and doesn't work. Then we are going to put it into effect.

We certainly invite the Congress to help us with that, including helping us fund research.

We have advocated rewriting the major pieces of environmental legislation in 21st century standards. That is to say, let us look far off into the future and decide what we want our country to look like in terms of the water and the air.

Perhaps we need higher standards. Perhaps when we advocate for uniform national goals and standards we need to aim high.

Thank you for the opportunity to testify today.

Mr. RYAN. Thank you.

Let me just finish up by saying thank you to everybody for coming up here.

You know, I am a new Member of Congress here and I guess I didn't get the memo which said that I know everything now that I am a Federal legislator.

But, I will tell you, there seems to be a bit of arrogance in this town that I have witnessed over the last couple of years. It is basically "Don't let the facts confuse me. I know the answer and I am right. Here is the way it goes."

Your ideas are something we need more of, this kind of interaction, this kind of evidence, these kinds of stories help us, in my opinion, to learn about what works, what doesn't, what did work but what doesn't work any more.

These are the things that I think we need to hear about up here. I am going to encourage my colleagues to review this testimony.

I hope that this hearing is the beginning of a dialog, an understanding. As you mentioned, Ms. Studders, we need a "second wave of environmental protection," one in which we stop making the environment a partisan issue and emphasize getting things done and doing what works.

So, I just want to say thank you very much for coming.

Bernie, did you want to say anything?

Mr. SANDERS. I would just add my thanks as well.

Mr. RYAN. I really appreciate everybody coming from such great distances.

This hearing is adjourned.

[Whereupon, at 5:27 p.m., the subcommittee was adjourned, to reconvene at the call of the Chair.]

[Additional information submitted for the hearing record follows:]

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The States Protect the Environment

The role of State governments in environmental protection has increased dramatically over the last ten years.

by R. Steven Brown

Executive Director's note: Some reviewers of an early draft of this article claimed to see in it an attack on funding for the Environmental Protection Agency, or an effort to increase State prominence in environmental protection by denigrating federal activities. We believe the article speaks for itself and that neither interpretation can survive a close reading of the article. However, for the record, our intention is to show the growth of State environmental protection activities and the current extent of those activities. We believe the extent of State activity revealed in these statistics is not generally known, and we believe that telling this story on behalf of the States is a fundamental responsibility of our association.

—Robert E. Roberts, Executive Director

A remarkable, and largely unnoticed, change in environmental protection has occurred over the past five to 10 years. The States have become the primary environmental protection agencies across the nation. Much has been written about EPA's role, or about State-EPA partnerships. This article seeks to tell the States' story.

Over the past year with help from other State-based organizations (many of which have articles in this issue), ECOS compiled a set of data that shows a remarkable maturation of the policy-making and regulatory capabilities of the State environmental agencies. This article presents those data in five categories: delegation, fiscal, enforcement, information gathering and policy-making.

Delegation

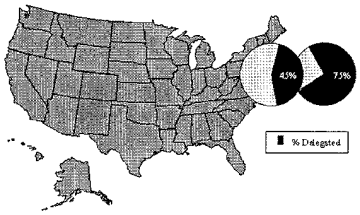
Congress intended for the States to administer most federal environmental programs.[1] Generally, a State petitions the EPA to administer one of the delegable programs. This process is commonly known as "delegation," or more legally as "assumption," or "primacy." The governor files a petition after the legislature has passed authorizing legislation that must be at least as stringent as the federal standard and after the State has shown that it has adequate resources.

Most federal programs are actually delegated in a piecemeal fashion, however. For example, a State may have created a program for new source performance standards, but may not have everything in place yet to run the hazardous air pollutant part of the Clean Air Act. Such a system aids the States in that it allows a State to proceed incrementally, but it complicates the discussion about what is delegated and which level of government runs which program.

It has become clear that the delegation of environmental programs to the States has increased dramatically in the past five years.

Nevertheless, it has become clear that the delegation of environmental programs to the States has increased dramatically in the past five years. In the summer of 1998, ECOS completed a delegation study for 22 of the programs from most of the major delegable federal acts.[2] This study showed the number of States with delegated programs for the following:

Delegated Programs Increased from 1993 to 1998



Clean Air Act: 42 States[3]
Clean Water Act: 34 States
Waste (RCRA): 37 States
Drinking Water: 39 States
Pesticides (FIFRA): 39 States

The overall delegation rate to the States in mid-1998 was about 65 percent, and about 74 percent

[1] ECOS has prepared two papers detailing the legislative history of the Clean Air Act and the Clean Water Act. We expect to publish these in early summer 1999.

[2] Currently presented on the ECOS web page at: http://www.sso.org/ecos/states.htm

[3] These are averages for the delegable programs under each Act for which ECOS has information.

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for the major environmental programs. This means, for example, that of the portions of these Acts that *could* be delegated, about 74% *had* been delegated.

Contrast this delegation rate to that of 1993, when EPA had delegated 39.5 percent of 22 environmental programs to the 50 States. By 1998, EPA had delegated 757 of 1,166 possible federal environmental programs to 53 States and territories, nearly a 75 percent increase from five years prior. States also operate many of their own, non-delegated environmental programs. Some of the rapid increase was attributable to programs like the wellhead protection program of the Safe Drinking Water Act (from 8 to 36 States) and the New Source Review program of the Clean Air Act (from 15 to 42 States).

In 1996 the States spent nearly twice as much ($12.5 billion) on environment/natural resources as the entire EPA budget ($6.5 billion).

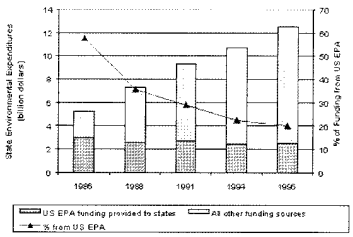
Fiscal

With such an increase in delegated programs, one might expect a parallel increase in both EPA and State funding to support the new programs. Starting with fiscal 1986, the Council of State Governments periodically researched each State's budget to compile total State spending for environmental protection and natural resources for each State. Data exists for 1986, 1988, 1991, 1994 and 1996. This State spending can be coupled with EPA and US Office of Management and Budget data on funds supplied to the States to present a picture of the source of environmental protection funds in the States.

In 1986 States spent about $5.2 billion on environmental protection and natural resources.[4] The EPA provided just over $3 billion of that, almost 58 percent.[5] But by fiscal 1996, a very different story had emerged. States spent about $12.5 billion,[6] with the EPA providing about $2.5 billion, or about 20 percent.[7] During the 10-year period from 1986 to 1996, State spending on the environment increased about 140 percent, while total EPA funding to the States decreased about 17 percent.[8] Most of the decline is attributable to reductions in water infrastructure support programs. In 1996 the States spent nearly twice as much ($12.5 billion) on environment/natural resources as the entire EPA budget ($6.5 billion).

It should come as no surprise that the States have also increased the size of their environmental staff over this 10-year period. In 1986 the State agencies expended about 38,000 work-years, but by 1996 that effort had increased to about 61,000 work-years, almost a 60 percent increase.

Trends in State Environmental/Natural Resource Funding



Enforcement

States are the primary enforcers of environmental law for delegated programs. The States also

[4] R. Steven Brown, et al., *The Resource Guide to State Environmental Protection*. Lexington, Kentucky: The Council of State Governments, 1988. Page 93.

[5] ECOS calculation, based on US Office of Management and Budget data. Some funding is also provided to the State environment/natural resource agencies by other federal agencies, but ECOS' preliminary research indicates that most federal funds are from EPA.

[6] Karen Marshall, et al. *The Resource Guide to State Environmental Protection Fifth Edition*. Lexington, Kentucky: The Council of State Governments, 1999. p. 32

[7] As per footnote 4.

[8] EPA believes it has "held the States harmless" by protecting the State categorical grant budgets during times of budget cuts. EPA has stated to ECOS that these grants are about $880 million per year. ECOS has used OMB numbers (which are higher) to reflect total EPA funding provided to the States for any purpose. Thus, total EPA funding to States has decreased, while categorical grants are reported to have increased over the past 10 years.

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enforce many State environmental laws that are not related to the national laws. EPA tracks and reports the enforcement actions that it and the States take each year, but only for delegated programs—enforcement actions that the State takes on non-delegated programs are not counted. Furthermore, EPA may not count some State enforcement actions for a variety of other reasons, such as differences in data management. Even with those limitations, over the past 10 years the States have consistently conducted about 75 percent of the enforcement actions[9] taken, with EPA doing the rest[10]. In recent years, the State workload has risen to 80 percent of the actions. [11]

During the 10-year period from 1986 to 1996, State spending on the environment increased about 140 percent, while total EPA funding to the States decreased about 17 percent.

Many States have also emphasized "compliance" over "enforcement." Methodologies for counting compliance assistance activities appear to still be inadequate and are a matter of current research by EPA and the States. As a result, it appears EPA and many States themselves do not track compliance assistance efforts that the States undertake. Unfortunately, this means that States and EPA may not be able to count some of the most important "enforcement actions" that States undertake. While EPA data shows that States perform most of the administrative enforcement actions, we know the number to be even higher because compliance assistance activities are not part of the enforcement action count.

Over the past 10 years, the States have consistently conducted about 75 percent of the enforcement actions taken.

Information

One of the most visible "products" of any environmental protection agency, State or federal, is information. Each State agency gathers, compiles, houses and analyzes a great deal of environmental information, both for delegated programs and for other environmental purposes important to them. When a State is delegated a program, it usually agrees to forward key information to EPA to one or more of 13 national environmental databases that EPA maintains. Six of these national databases house environmental quality data (the others have toxicology information, or information about regulated facilities). In the summer of 1999, ECOS and EPA expect to jointly publish a report that describes the source of the data in these six national databases.[12] For example:

- Air data: >99% of EPA's data comes from States[13]
- Water data: ~91% of EPA's data comes from States [14]
- Hazardous waste data: >92% of EPA's data waste data comes from States [15]

That is, over 94 percent of all the environmental quality data in EPA's national databases was first collected and compiled by State environmental agencies. The States and EPA share this data for a variety of purposes (for example, environmental performance measures).

The States also collect additional environmental quality data that is not contained in national databases. Some of this data is collected for delegated programs, but is not usually forwarded to EPA because EPA does not require it (for example, water quality reports from minor point sources).

[9] Administrative actions and judicial referrals.

[10] US EPA, Office of Enforcement and Compliance Assurance; February 18, 1998, web page: http://es.epa.gov/oeca/96accomp/appa6.html.

[11] EPA has told ECOS that it is more likely to spend its time on large, complex enforcement cases, which it believes have a significant qualitative impact, if not a quantitative one.

[12] *Environmental Reporting Data in EPA's National Systems: Data Collection by State Agencies.* ECOS/EPA, 1999. In press.

[13] Aerometric Information Retrieval System (AIRS) and AIRS Facility Subsystem (AFS). Essentially, AIRS/AFS is states' database.

[14] Safe Drinking Water Information System (SDWIS), 99%; Permit Compliance System (PCS—a component of the National Pollution Discharge Elimination System), 83% of major sources and 94% of minor sources; and STORET, 90%.

[15] Biennial Reporting System (BRS), 92%.

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Some data is collected because of environmental laws that States have that are not related to delegated programs (for example, most solid waste, water quantity, natural resource management, growth management or land use planning data). ECOS has not yet assessed the amount of this other data that States collect, but we believe it to be a significant amount, perhaps even exceeding the environmental data reported to EPA.

Policy Making

States implement most environmental protection programs, so they often see innovative solutions for environmental problems first. Each year since ECOS began its annual meetings (starting in 1994), it has compiled the program and implementation innovations that ECOS' members have presented. These cover the complete range of environmental protection, including delegated and non-delegated programs. ECOS has now compiled hundreds of these innovations.[16] Some of these State ideas have been nationally recognized by Innovations Awards programs such as those of The Council of State Governments and Harvard University. Our members have consistently rated this kind of peer-sharing as one of the most important benefits of ECOS.

Over 94 percent of all the environmental quality data in EPA's national databases was first collected and compiled by State environmental agencies.

However creative and inventive State agency solutions can be, from time to time legislative solutions are more appropriate. States have not shied away from implementation of new environmental laws. According to the National Conference of State Legislatures, the States passed over 700 environmental bills in 1997 alone.[17] At least half of these dealt with non-delegated environmental programs such as pollution prevention and solid waste management.

Conclusion

States have proven to be serious about their responsibilities as stewards of the environment, and have more than fulfilled the expectations of the 1972 Congress that drafted some of the original legislation envisioning the State role in the federal environmental protection system. In fact, almost 30 years later, the States are leaders in environmental protection. Whether the yardstick is delegation, fiscal, enforcement, information gathering or policy-making, the States are responsible for an increasing, and perhaps surprising, amount of the work done to protect the nation's environment.

[16] *1998 State Environmental Innovations*. Washington, DC: ECOS, 1998.

[17] *George Hagevik and C. Kohler, "Trends in State Environmental Law 1997," NCSL Report, 1998.*

Material for this article was compiled by ECOS staff including: R. Steven Brown, Mary Blakeslee, and Erin Wuchte. Mr. Brown is the Director of Programs and Development at ECOS and has tracked State contributions to environmental protection for nearly 15 years. Mary Blakeslee is ECOS' Director of Information Management, and is a 30+-year veteran of the EPA on loan to ECOS. Erin Wuchte is an Executive Intern to ECOS from the University of Maryland School of Public Affairs.

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*1 REHABILITATING INTERSTATE COMPETITION: RETHINKING THE "RACE TO THE BOTTOM" RATIONALE FOR FEDERAL ENVIRONMENTAL REGULATION

Richard L. Revesz [FNa]

At the Fall Meeting Ron Wright, chair of the Annual Award for Scholarship Committee, presented Professor Revesz the Section's Award for Scholarship for his article with the above title published at 67 N.Y.U.L. Rev. 1210 (1992). Below is a shortened version of the article prepared by Professor Revesz.

Perhaps the most widely accepted justification for environmental regulation at the federal level is that it prevents states from competing for industry by offering pollution control standards that are too lax. This competition is said to produce a "race to the bottom"--that is, a race from the desirable levels of environmental quality that states would pursue if they did not face competition for industry to the increasingly undesirable levels that they choose in the face of such competition.

Race-to-the-bottom arguments for federal environmental regulation are commonplace in the academic literature and were explicitly cited by Congress as a central justification for the passage of important federal environmental statutes. My article challenges the accepted wisdom on the race to the bottom. It argues that, contrary to prevailing assumptions, competition among states for industry should not be expected to lead to a race that decreases social welfare; indeed, as in other areas, such competition can be expected to produce an efficient allocation of industrial activity among the states. It shows, moreover, that federal regulation aimed at dealing with the asserted race to the bottom, far from correcting evils of interstate competition, is likely to produce results that are undesirable.

This challenge to the validity of race-to-the-bottom arguments should lead to serious questioning of the federal environmental statutes. While there are other rationales for regulation at the federal level, they rest upon different empirical foundations and justify different forms of federal intervention tion than does the race-to-the-bottom rationale. Most importantly, the other prominent market failure argument for federal environmental regulation is that, in the absence of such regulation, interstate externalities will lead states to underregulate because some of the benefits will accrue to other states. But interstate externalities explain *12 only isolated parts of the federal environmental statutes, with a good protion of the remainder being justified on race-to-the-bottom grounds. Alternatively, one might justify federal regulation on public choice grounds by arguing that state political processes systematically undervalue the benefits of environmental protection, or overvalue the corresponding costs, whereas at the federal level the calculus is more accurate. But this rationale rests upon an empirical claim about failures in the political process rather than failures in the market for industrial location. Thus, at the very least, a different predicate would have to be constructed to defend the federal statutes.

The Race to the Bottom Over Environmental Regulation Because commentators have not paid sufficient attention to the characteristics that a race to the bottom *13 over environmental regulation would have, I start by defining the elements of the race. First, consider an "island" jurisdiction--a single jurisdiction surrounded by ocean, which is unaffected by what occurs beyond its borders. This island jurisdiction has a number of firms engaged in industrial activity that produces air pollution. The citizens of the jurisdiction suffer adverse health effects as a result of the pollution.

In the absence of regulation, the firms will choose the level of pollution that maximizes their profits and, as is the case generally with externalities, will ignore the social costs produced by their activities--the costs borne by the citizens who must breathe air of poor quality. The firms will be able to produce their goods more cheaply and

will pollute more than if they were forced to bear these social costs.

Traditional economic theory holds that the socially optimal level of pollution reduction is the level that maximizes the benefits that accrue from such reduction to the individuals who breathe the polluted air minus the costs of pollution control. To achieve this optimal reduction, a regulator must force polluters to internalize the costs that they impose on breathers. For the purposes of this discussion, it does not matter whether the regulator achieves this goal through command-and-control regulation, Pigouvian taxes, [FN1] marketable permit schemes, or other strategies. Finally, for comparative purposes, assume that in this island jurisdiction the level of pollution reduction chosen by the regulator does not affect entry into or exit from the market. Thus, the number of polluters in the jurisdiction will be independent of the actions of the regulator.

Consider, instead, a "competitive" jurisdiction. This jurisdiction is affected by the actions taken in other jurisdictions, and, in turn, its own actions have effects beyond its borders. I have in mind a state within a federal system.

In order to focus the discussion on the competition among states to attract industry, assume for now that there are no inter-jurisdictional pollution externalities. Assume further, for ease of exposition, that the total number of firms across jurisdictions remains fixed--that although firms can move from one jurisdiction to another, there is no entry into or exit from the national market. Within the national market then, firms will try to reduce the costs of pollution control by moving to the jurisdiction that imposes the least stringent requirements. Industrial migration will occur whenever the reduction in the expected costs of complying with the environmental standards is lower than the transaction costs involved in moving.

As in the island situation, competitive jurisdictions will want to set a pollution reduction level that takes account of the benefits to its citizens of such reduction and of the costs to polluters in the jurisdiction of complying with this level. There will be, however, an additional factor to consider: the location of a firm can lead to the creation of jobs, and thus to increases in wages and taxes--important benefits for a state. As a result of this additional factor, competitive jurisdictions will consider the potential benefits, in terms of inflows of industrial activity, of setting standards that are less stringent than those of other jurisdictions, and, conversely, the potential costs, in terms of outflows of industrial activity, of setting more stringent standards.

With this background in mind, I present the structure of the race-to- the-bottom argument. Remember, however, that I am not positing that a competitive jurisdiction will in fact engage in a race to the bottom. I am, instead, merely explaining the theoretical structure of race-to-the-bottom claims.

The simplest example of the race to the bottom is one in which there are two identical jurisdictions that act noncooperatively (that is, they are unable to enter into enforceable agreements). Assume that State 1 initially sets its level of pollution reduction at the level that would be optimal if it were an island. State 2 then considers whether setting its standard at the same level is as desirable as setting it at a less stringent level. For certain levels of benefits of pollution reduction, costs on polluters, and benefits from the migration of industry, the less stringent standard will be preferable, and industrial migration from State 1 to State 2 will ensue.

To recover some of its loss of jobs and tax revenues, State 1 then considers relaxing its standard, and so on. This process of adjustment and readjustment continues until an equilibrium is reached, in which neither state has an incentive to change its standard further.

At the conclusion of this race, both states will end up with equally lax standards, and thus they will not experience any inflow or outflow of industry. Each of these competitive states will thus have the same level of industrial activity that it would have had as an island jurisdiction. Social welfare in these states, however, will be less than it would be in identical island jurisdictions, because, as a result of the race to the bottom, the states will have adopted suboptimally lax standards.

*14 The Uncertain Theoretical Foundation of Race-to-the-Bottom Arguments Race-to-the-bottom advocates must clear an initial hurdle. For the competition among states to attract industry to be a race to the bottom, interstate competition must be socially undesirable. But interstate competition can be seen as competition among producers of a good--the right to locate within the jurisdiction--to attract potential consumers of that good--firms interested in locating in the jurisdiction. Even though states might not have the legal authority to prevent firms from locating within their borders, such firms must comply with the fiscal and regulatory regime of the state; the resulting costs to the firms can be analogized to the sale price of a traditional good.

If one believes that competition among sellers of widgets is socially desirable, why is competition among sellers of location rights socially undesirable? If federal regulation mandating a supra-competitive price for widgets is socially undesirable, why is federal regulation mandating a supra- competitive price for location rights socially desirable?

The most compelling theoretical analysis of this problem is contained in an article by Wallace Oates and Robert Schwab published in 1988. In their model,

jurisdictions compete for a mobile stock of capital by lowering taxes and relaxing environmental standards that would otherwise deflect capital elsewhere. In return for an increased capital stock, residents receive higher incomes in the form of higher wages. The community must, however, weigh the benefits of higher wages against the cost of foregone tax revenues and lower environmental quality.

Oates and Schwab envision jurisdictions that are large enough for individuals to live and work in the same jurisdiction. Moreover, they assume that there are no interjurisdictional externalities: pollution generated in one jurisdiction does not spill over into another.

Each jurisdiction produces the same single good, which is sold in a national market. The production of the good requires capital and labor and produces waste emissions. The instrument of environmental policy is command-and-control regulation: each jurisdiction sets the total amount of allowable emissions. In addition, each jurisdiction raises revenues by levying a tax on each unit of capital. Capital is perfectly mobile across jurisdictions and seeks to maximize its after-tax earnings.

Labor, in contrast, is perfectly immobile. Each individual in the community, who is identical in both tastes and productive capacity, puts in a fixed period of work each week, and everyone is employed. Additional capital raises the productivity of workers, and therefore their wages.

Oates and Schwab describe the role of an individual resident of a jurisdiction as follows:

First, he is a consumer, seeking in the usual way to maximize utility over a bundle of goods and services that includes a local public good, environmental quality. And second, he supplies labor for productive purposes in return for his income. From the latter perspective, residents have a clear incentive to encourage the entry of more capital as a means of increasing his wage. But this jurisdiction must compete against other jurisdictions. To attract capital, the community must reduce taxes on capital (which lowers income and, therefore, indirectly lowers utility) and/or relax environmental standards (which lowers utility directly). These are tradeoffs inherent in interjurisdictional competition.

Each jurisdiction makes two policy decisions: it sets a tax rate on capital and an environmental standard. Oates and Schwab show that competitive jurisdictions will set a tax rate on capital of zero. For positive tax rates, the revenues are less than the loss in wages that results from the move of capital to other jurisdictions: subsidies would cost the jurisdiction more than the increase in wages that additional capital would generate.

In turn, competitive jurisdictions will set an environmental standard that is defined by equating the willingness to pay for an additional unit of environmental quality with the corresponding change in wages. Pollution beyond this level generates an increment to wage income that is less than the value of the damage to residents from the increased pollution; in contrast, less pollution creates a loss in wage income greater than the corresponding

decrease in pollution damages.

Oates and Schwab show that these choices of tax rates and environmental standards are socially optimal. They conclude that "competition among jurisdictions is thus conductive to efficient outcomes." Thus, there is no race to the bottom.

The Oates and Schwab analysis does not stand alone. Indeed, race-to-the- bottom arguments in the environmental area have been made for the last two decades with essentially no theoretical foundation.

The Implications of the Environmental Race to the Bottom

Even if there were a race to the bottom in the environmental arena, federal regulation would not necessarily be an appropriate response. First, if the premises underlying the race to the bottom hold, federal environmental regulation will have undesirable effects on other state regulatory or fiscal interests; the supposed benefits of federal environmental regulation should therefore be balanced against these undesirable effects. *15 Second, logic compels the conclusion that arguments in favor of federal environmental regulation are a frontal challenge to federalism, because the problems that they seek to correct can be addressed only by exclusive federal regulatory and fiscal powers.

Consider two states that compete over two variables--for example, environmental protection and worker safety. Assume that, in the absence of federal regulation, State 1 chooses a low level of environmental protection and a high level of worker safety. State 2 does the opposite: it chooses a high level of environmental protection and a low level of worker safety protection. Both states are in a competitive equilibrium: industry is not migrating from one to the other.

Suppose that federal regulation then imposes on both states a high level of environmental protection. The federal scheme does not add to the costs imposed upon industry in State 2, but it does in State 1. Thus, the federal regulation will upset the competitive equilibrium, and unless State 1 responds, industry will migrate from State 1 to State 2. The logical response of State 1 is to adopt less stringent worker safety standards. This response will mitigate the magnitude of the industrial migration that would otherwise have occurred.

Thus, federal environmental standards can have adverse effects on other state programs. Such secondary effects must be considered in evaluating the desirability of federal environmental regulation. Most important, the presence of such effects suggest that federal regulation will not be able to eliminate the negative effects of interstate competition. Recall that the central tenet of race-to-the-bottom claims is that competition will lead to the reduction of social welfare; the assertion that states enact suboptimally lax environmental standards is simply a consequence of this more basic problem. In the face of federal environmental regulation, however, states will continue to compete for industry by adjusting the incentive structure of other state programs. Federal regulation thus will not resolve the prisoner's dilemma.

One might respond to these arguments by saying that worker safety should also be the subject of federal regulation. But states would then compete over minimum wage laws, fair labor standards, and so on. It is difficult to imagine a federal system in which all the regulatory requirements that impose costs on industry are mandated at the federal level.

Suppose, however, that this were the case. States impose burdens on industry not only through regulation but also through taxes, which fund a variety of state programs and functions. So, if all regulatory programs are federalized, states will still be able to compete through their fiscal powers. Consider, now, an example in which State 1 and State 2, as island states, would impose both strigent regulatory standards and high corporate taxes. When placed in a competitive situation, State 1 chooses stringent regulatory standards and low corporate taxes, whereas State 2 does the opposite. If the federal government then requires stringent regulatory standards, State 2 will respond by lowering its taxes, and by, say, decreasing the size of its income maintenance programs. This

reduction is a direct byproduct of the federal regulatory scheme.

Thus, even if all regulatory functions are federalized, federal regulation will contine to have an adverse effect on other issues of state concern -- in this example, social welfare programs. Moreover it will not eliminate the reduction in social welfare that results from competition among the states.

The next logical step, of course, is to suggest preemption of state taxes, because otherwise the supposedly evil effects of interstate competition will persist. The race-to-the-bottom rationale for federal environmental regulation is, therefore, radically underinclusive. It seeks to solve a problem that can be addressed only by wholly eliminating state autonomy. The prisoner's dilemma will not be solved through federal environmental regulation alone, as the race- to-the-bottom argument posits. States will simply respond by competing over another variable. Thus, the only logical answer is to eliminate the possiblility of any competition altogether. In essense, then, the race-to-the- bottom argument is an argument against federalism.

Conclusion

My article should not be read as a definitive refutation of race-to-the- bottom arguments in the environmental area. It is intended, instead, to question the underpinnings of such arguments and to suggest that the forces of interstate competition, far from being conclusively undesirable, are at least presumptively beneficial. If this project proves to be successful, it will be followed, with out a doubt, by studies attempting to define specific circumstances in which federal regulation could improve upon the results of interstate competition.

[FNa]. Professor of Law, New York University.

[FN1]. Pigouvian taxes are taxes per unit of pollution set at a level equal to the marginal social damage of pollution. Firms are not restricted in the amount that they can pollute, but they must pay a tax for each unit of pollution that they generate. Pigouvian taxes thus force the

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